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Dichotomous keys to the species of *Solanum* L. (Solanaceae) in continental Africa, Madagascar (incl. the Indian Ocean islands), Macaronesia and the Cape Verde Islands

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Abstract

Solanum L. (Solanaceae) is one of the largest genera of angiosperms and presents difficulties in identification due to lack of regional keys to all groups. Here we provide keys to all 135 species of *Solanum* native and naturalised in Africa (as defined by World Geographical Scheme for Recording Plant Distributions): continental Africa, Madagascar (incl. the Indian Ocean islands of Mauritius, La Réunion, the Comoros and the Seychelles), Macaronesia and the Cape Verde Islands. Some of these have previously been published in the context of monographic works, but here we include all taxa. The paper is designed to be used in conjunction with the web resource Solanaceae Source (www.solanaceaesource.org) and hyperlinks provide access to online descriptions, synonymy and images (where available) of each species. All taxa treated and specimens seen are included in searchable Suppl. material 1, 2.

Keywords

Africa, Aldabra, Azores, Canary Islands, Cape Verde, Comoros, cultivated plants, identification, keys, Madagascar, Madeira, Mauritius, La Réunion, Seychelles, *Solanum*, weeds

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Introduction

Solanum L. (Solanaceae) is one of the largest of angiosperm genera (Frodin 2004) with ca. 1,200 species distributed worldwide with species on all continents except Antarctica. The greatest species diversity in the genus occurs in the Neotropics (see Bohs 2005), but significant diversity also occurs in the Old World, with Africa and Australia particularly important areas for diversification (see Vorontsova and Knapp 2016; Echeverría-Londoño et al. 2018). Due to its large number of species and the number of introductions and cultivated taxa, *Solanum* is often an identification challenge for non-specialists. Recent completion of several large monographic treatments of the *Solanum* of Africa (e.g. Vorontsova and Knapp 2016; Knapp and Vorontsova 2016; Särkinen et al. 2018) as part of the US National Science Foundation funded Planetary Biodiversity Inventory project "PBI Solanum" means we can now provide keys for the genus across the continent and for adjacent islands such as Madagascar and Macaronesia. Some of these have been published in the Open Access literature (e.g. Knapp 2013; Knapp and Vorontsova 2016; Särkinen et al. 2018), but the largest of these, treating the spiny solanums (Vorontsova and Knapp 2016) is not. Several species that are either naturalised (e.g. members of the Brevantherum Clade) or cultivated (tree tomatoes, pepinos, potatoes and tomatoes) in the region are also not treated as part of these monographic treatments, although complete species descriptions and photographs are provided on the web resource Solanaceae Source (www.solanaceaesource.org).

Here we provide dichotomous keys that include all groups and species (native, naturalised and widely cultivated; see Table 1 for species list) of *Solanum* occurring in continental Africa, Madagascar (incl. the Indian Ocean islands of Mauritius, La Réunion, the Comoros, and the Seychelles), Macaronesia and the Cape Verde Islands to facilitate identification across the region. Taxa occurring in each country in the region are shown in Table 2 and a map of *Solanum* diversity (all taxa) is presented in Figure 1. Keys to individual groups are also provided for the 135 *Solanum* species occurring in the region (see Table 1 and Appendix 1 for a species list). We hope that these keys will encourage collection and documentation of *Solanum* across Africa and uncover new distributions and perhaps new species for the region.

Materials and methods

We modified keys from published monographs for groups of *Solanum* from the botanical continent "Africa" as defined in the World Geographical Scheme for Recording Plant Distributions (WGSRPD; Brummitt 2001). This corresponds basically to the countries of the continent of Africa, but excludes the Sinai Peninsula (politically part of Egypt and in WGSRPD part of Western Asia). It also includes islands grouped as Macaronesia (Azores, Canary Islands, Madeira and the Cape Verde Islands) and Madagascar and other Indian Ocean islands east to Rodrigues.

We assessed distribution using the published monographs, with additional data points added from subsequent herbarium visits. All specimens seen for these keys can be seen in the Supplemental File and in the dataset published on the NHM Data Portal (https://doi.org/10.5519/0042549). For descriptions of the taxa, users are referred to the original publications or the Solanaceae Source website (www.solanaceaesource.org), where all species treated here are described and synonymy listed.

To access descriptions on the Solanaceae Source website, begin by typing the species name in the search box in the upper right-hand part of the screen banner (tick the option "Taxonomy" below the box); when the correct name you are searching for appears, select it, then push the "Search" button to the right of the search box (if you do not push the "Search" button, nothing will happen). You will be taken to the species page, where images and synonyms appear on the opening page; to access descriptions, click on the "Description" tab where information can be obtained. Up-to-date specimen details are not currently available on the website but can be found as described above.

Keys

Solanum can be divided into 13 major clades or monophyletic groups (Bohs 2005; Weese and Bohs 2007; Särkinen et al. 2013; see Figures 2 and 3 for photographs illustrating representative morphology of these groups in Africa). The largest monophyletic clade is the Leptostemonum clade, or the "spiny solanums", which comprises approximately half of the species diversity of the genus; divisions within that clade have been defined by Stern et al. (2011), Vorontsova et al. (2013) and Aubriot et al. (2016). This group is rapidly diversifying in the Old World (Echeverría-Londoño et al. 2018), with most taxa occurring in the Old World belonging to a single monophyletic group. Previous treatments (e.g. Whalen 1984; Jaeger 1985; Jaeger and Hepper 1986) had suggested the African taxa were members of, or closely related to New World groups. More information on the phylogenetic relationships of African and Asian members of the Leptostemonum Clade can be found in Vorontsova et al. (2013) and Aubriot et al. (2016). Other clades with significant species diversity in Africa (as defined here) are the African non-spiny (ANS) and Normania Clades (both endemic to the region; see Bohs and Olmstead 2001) and the Morelloid Clade (with a number of widespread weedy taxa, see Särkinen et al. 2018). Other clades such as the Geminata, Brevantherum and Potato Clades are represented only by introduced or cultivated species. The Dulcamaroid Clade has a single species native to Mediterranean northern Africa and Macaronesia and two cultivated taxa that can become naturalised (Knapp 2013). In order to facilitate identification and to assist with the discovery of novelties from the region, we provide a key to the major groups (clades) of *Solanum* following the most recent phylogeny of the genus (Särkinen et al. 2013) and additional dichotomous keys to the species within each group. Groups are ordered as they occur as branches in the phylogeny of Särkinen et al. (2013).

Table 1. The 135 species of *Solanum* (native, naturalised and widely cultivated) occurring in Africa as defined by Brummitt (2001), with their places of original publication and clade membership as currently understood (Major Clades sensu Bohs 2005; minor clades are divisions within these sensu Bohs 2007; Stern et al. 2011; Vorontsova et al. 2103; Särkinen et al. 2015, 2018; Aubriot et al. 2016; Tepe et al. 2016).

Species	Place of original publication	Major Clade	Minor clade
Solanum aculeastrum Dunal	Prodr. [A. P. de Candolle] 13(1): 366. 1852.	Leptostemonum	Old World-Africa
Solanum aculeatissimum Jacq.	Collectanea [Jacquin] 1: 100. 1787 ['1786'].	Leptostemonum	Acanthophora
Solanum adoense Hochst. ex A.Rich.	Tent. Fl. Abyss. 2: 105. 1850 [1851].	Leptostemonum	Old World-Africa
Solanum aethiopicum L.	Cent. Pl. 2: 10. 1756.	Leptostemonum	Old World-Africa
Solanum africanum Mill.	Gard. Dict. ed. 8, no. 26. 1768.	African non-spiny (ANS)	
Solanum agnewiorum Voronts.	Phytotaxa 10: 32. 2010.	Leptostemonum	Old World-Africa
Solanum agrarium Sendtn.	Fl. Bras. (Martius) 10: 68, fig. 5, 32–33. 1846.	Leptostemonum	Gardneri
Solanum aldabrense C.H.Wright	Kew Bull. 1894: 149. 1894.	Leptostemonum	Old World
Solanum americanum Mill.	Gard. Dict. ed. 8, no. 5. 1768.	Morelloid	Black nightshade
Solanum anguivi Lam.	Tabl. Encycl. 2: 23. 1794.	Leptostemonum	Old World-Africa
Solanum anomalum Thonn.	Beskr. Guin. Pl. 126 1827.	Leptostemonum	Old World-Africa
Solanum arundo Mattei	Boll. Reale Orto Bot. Giardino Colon. Palermo 7: 188. 1908.	Leptostemonum	Old World-Africa
Solanum atropurpureum Schrank	Syll. Ratisb. 1: 200. 1824.	Leptostemonum	Acanthophora
Solanum aureitomentosum Bitter	Repert. Spec. Nov. Regni Veg. 11: 18. 1912.	Leptostemonum	Old World-Africa
Solanum batoides D'Arcy & Rakot.	Fl. Madag., Fam. 176: 75. 1994.	Leptostemonum	Old World-Madagascar
Solanum betaceum Cav.	Anales Hist. Nat. 1: 44. 1799.	Cyphomandra	Pachyphylla
Solanum betroka D'Arcy & Rakot.	Fl. Madag., Fam. 176: 77. 1994.	African non-spiny (ANS)	
Solanum bumeliifolium Dunal	Prodr. [A. P. de Candolle] 13(1): 292. 1852.	Leptostemonum	Old World-Madagascar
Solanum burchellii Dunal	Prodr. [A. P. de Candolle] 13(1): 291. 1852.	Leptostemonum	Old World-Africa
Solanum campylacanthum Hochst. ex A.Rich.	Tent. Fl. Abyss. 2: 102. 1850.	Leptostemonum	Old World-Africa
Solanum capense L.	Syst. ed. 10: 935. 1759.	Leptostemonum	Old World-Africa
Solanum capsicoides All.	Auct. Syn. Meth. Stirp. Hort. Regii Taur. 64. 1773.	Leptostemonum	Acanthophora
Solanum catombelense Peyr.	Sitzungsber. Kaiserl. Akad. Wiss., Math.-Naturwiss. Cl. 38: 576. 1860.	Leptostemonum	Old World-Africa
Solanum cerasiferum Dunal	Prodr. [A. P. de Candolle] 13(1): 365. 1852.	Leptostemonum	Old World-Africa
Solanum chenopodioides Lam.	Tabl. Encycl. 2: 18. 1794.	Morelloid	Black nightshade
Solanum chrysotrichum Schltdl.	Linnaea 19: 304. 1847.	Leptostemonum	Torva
Solanum coagulans Forssk.	Fl. Aegypt.-Arab. 47. 1775.	Leptostemonum	Old World-Africa
Solanum cordatum Forssk.	Fl. Aegypt.-Arab. 47. 1775.	Leptostemonum	[not assigned]
Solanum croatii D'Arcy & R.C.Keating	Phytologia 34: 282. 1976.	Leptostemonum	Old World-Madagascar
Solanum cyaneopurpureum De Wild.	Pl. Bequaert. 1: 425. 1922.	Leptostemonum	Old World-Africa
Solanum cymbalariifolium Chiov.	Boll. Soc. Bot. Ital. 1925: 107. 1925.	Leptostemonum	Old World-Africa
Solanum dasyphyllum Schumach. & Thonn.	Beskr. Guin. Pl. 126 [146]. 1827.	Leptostemonum	Old World-Africa
Solanum dennekense Dammer	Bot. Jahrb. Syst. 38: 57. 1905.	Leptostemonum	Old World-Africa
Solanum diphyllum L.	Sp. Pl. 184. 1753.	Geminata	
Solanum elaeagnifolium Cav.	Icon. 3: 22, tab. 243. 1795.	Leptostemonum	Elaeagnifolium
Solanum erianthum D.Don	Prodr. Fl. Nep. 96. 1825.	Brevantherum	
Solanum erythracanthum Dunal	Prodr. [A. P. de Candolle] 13(1): 201. 1852.	Leptostemonum	Old World-Madagascar
Solanum forskalii Dunal	Hist. Nat. Solanum 237. 1813.	Leptostemonum	Old World-Africa
Solanum giganteum Jacq.	Collectanea [Jacquin] 4: 125. 1791.	Leptostemonum	Old World-Africa

Species	Place of original publication	Major Clade	Minor clade
Solanum glabratum Dunal	Hist. Nat. Solanum 240. 1813.	Leptostemonum	Old World-Africa
Solanum goetzei Dammer	Bot. Jahrb. Syst. 28: 473. 1900.	Leptostemonum	Old World-Africa
Solanum guineense L.	Sp. Pl. 184. 1753.	African non-spiny (ANS)	
Solanum hastifolium Hochst. ex Dunal	Prodr. [A. P. de Candolle] 13(1): 284. 1852.	Leptostemonum	Old World-Africa
Solanum heinianum D'Arcy & R.C.Keating	Phytologia 34: 282. 1976.	Leptostemonum	Old World-Madagascar
Solanum herculeum Bohs	Plant Syst. Evol. 228: 44. 2001.	Normania	
Solanum humblotii Dammer	Bot. Jahrb. Syst. 38: 184. 1906.	African non-spiny (ANS)	
Solanum humile Lam.	Tabl. Encycl. 2: 23. 1794.	Leptostemonum	Old World-Africa
Solanum imamense Dunal	Prodr. [A. P. de Candolle] 13(1): 85. 1852.	African non-spiny (ANS)	
Solanum inaequiradians Werderm.	Notizbl. Bot. Gart. Berlin-Dahlem 12: 90. 1934.	Leptostemonum	Old World-Africa
Solanum incanum L.	Sp. Pl. 188. 1753.	Leptostemonum	Old World-Africa
Solanum insanum L.	Mant. 1: 46. 1767.	Leptostemonum	Old World-Tropical Asia
Solanum ivohibe D'Arcy & Rakot.	Fl. Madag., Fam. 176: 97. 1994.	African non-spiny (ANS)	
Solanum jubae Bitter	Bot. Jahrb. Syst. 54: 501. 1917.	Leptostemonum	Old World-Africa
Solanum laciniatum Aiton	Hort. Kew. ed. 1, 1: 247. 1789.	Archaesolanum	
Solanum lamprocarpum Bitter	Repert. Spec. Nov. Regni Veg. Beih. 16: 107. 1923.	Leptostemonum	Old World-Africa
Solanum lanzae J.-P.Lebrun & Stork	Candollea 50: 217. 1995.	Leptostemonum	Old World-Africa
Solanum lichtensteinii Willd.	Enum. Pl. (Willdenow) 1: 238. 1809.	Leptostemonum	Old World-Africa
Solanum lidii Sunding	Blyttia 24: 368. 1966.	Leptostemonum	Old World
Solanum linnaeanum Hepper & P.-M.L. Jaeger	Kew Bull. 41: 435. 1986.	Leptostemonum	Old World-Africa
Solanum litoraneum A.E.Gonç.	Kew Bull. 52(3): 703. 1997.	Leptostemonum	Old World-Africa
Solanum lycopersicum L.	Sp. Pl. 185. 1753.	Potato	Tomato
Solanum macracanthum A.Rich.	Tent. Fl. Abyss. 2: 106. 1850.	Leptostemonum	Old World-Africa
Solanum macrocarpon L.	Mant. Pl. Altera: 205. 1771.	Leptostemonum	Old World-Africa
Solanum macrothyrsum Dammer	Bot. Jahrb. Syst. 38: 185. 1906.	African non-spiny (ANS)	
Solanum madagascariense Dunal	Prodr. [A. P. de Candolle] 13(1): 99. 1852.	African non-spiny (ANS)	
Solanum mahoriense D'Arcy & Rakot.	Ann. Missouri Bot. Gard. 73: 498. 1986.	Leptostemonum	Old World-Madagascar
Solanum malindiense Voronts.	Syst. Bot. 35: 904. 2010.	Leptostemonum	Old World-Africa
Solanum mammosum L.	Sp. Pl. 187. 1753.	Leptostemonum	Acanthophora
Solanum marginatum L.f.	Suppl. 147. 1781.	Leptostemonum	Old World-Africa
Solanum mauense Bitter	Repert. Spec. Nov. Regni Veg. Beih. 16: 42. 1923.	Leptostemonum	Old World-Africa
Solanum mauritianum Scop.	Delic. Fl. Faun. Insubr. 3: 16. 1788.	Brevantherum	
Solanum melastomoides C.H.Wright	Bull. Misc. Inform. Kew 1894: 128. 1894.	Leptostemonum	Old World-Africa
Solanum melongena L.	Sp. Pl. 186. 1753.	Leptostemonum	Old World-Tropical Asia
Solanum memphiticum J.F.Gmel.	Syst. Nat., ed. 13[bis] 2(1): 385. 1791	Morelloid	Black nightshade
Solanum muricatum Aiton	Hort. Kew, ed. 1, 1: 250. 1789.	Potato	Basarthrum
Solanum myoxotrichum Baker	J. Linn. Soc., Bot. 21: 426. 1885.	Leptostemonum	Old World-Madagascar
Solanum myrsinoides D'Arcy & Rakot.	Fl. Madag., Fam. 176: 115. 1994.	African non-spiny (ANS)	
Solanum nava Webb & Berthel.	Phyt. Canar. 2. 3(3): 123. 1845.	Normania	

Species	Place of original publication	Major Clade	Minor clade
Solanum nigriviolaceum Bitter	Repert. Spec. Nov. Regni Veg. Beih. 16: 163. 1923.	Leptostemonum	Old World-Africa
Solanum nigrum L.	Sp. Pl. 186. 1753.	Morelloid	Black nightshade
Solanum nitidibaccatum Bitter	Repert. Spec. Nov. Regni Veg. 11: 208. 1912.	Morelloid	Black nightshade
Solanum pampaninii Chiov.	Res. Sci. Somalia Ital. 1: 128. 1916.	Leptostemonum	Old World-Africa
Solanum pauperum C.H.Wright	Bull. Misc. Inform. Kew 1894: 127. 1894.	Leptostemonum	Old World-Africa
Solanum pectinatum Dunal	Prodr. [A. P. de Candolle] 13(1): 250. 1852.	Leptostemonum	Lasiocarpa
Solanum phoxocarpum Voronts.	Syst. Bot. 35: 903. 2010.	Leptostemonum	Old World-Africa
Solanum pimpinellifolium L.	Cent. Pl. 1: 8. 1755.	Potato	Tomato
Solanum polhillii Voronts.	Syst. Bot. 35: 902. 2010.	Leptostemonum	Old World-Africa
Solanum pseudospinosum C.H.Wright	Fl. Trop. Afr. [Oliver et al.] 4, 2: 220. 1906.	Morelloid	Black nightshade
Solanum pyracanthos Lam.	Tabl. Encycl. 2: 21. 1794.	Leptostemonum	Old World-Madagascar
Solanum retroflexum Dunal	Prodr. [A. P. de Candolle] 13(1): 50. 1852.	Morelloid	Black nightshade
Solanum richardii Dunal	Encycl. [J. Lamarck & al.] Suppl. 3: 775. 1814.	Leptostemonum	Old World-Africa
Solanum rigidum Lam.	Tabl. Encycl. 2: 23. 1794.	Leptostemonum	Old World-Africa
Solanum robustum H.L.Wendl.	Flora 27: 784. 1844.	Leptostemonum	Erythrotrichum
Solanum rubetorum Dunal	Prodr. [A. P. de Candolle] 13(1): 304. 1852.	Leptostemonum	Old World-Africa
Solanum runsoriense C.H.Wright	Uganda Prot. (H.H.Johnston) 1: 326. 1902.	African non-spiny (ANS)	
Solanum ruvu Voronts.	J. E. Afr. Nat. Hist. 99: 230. (2010) 2011.	Leptostemonum	Old World-Africa
Solanum sambiranense D'Arcy & Rakot.	Fl. Madag., Fam. 176: 123. 1994.	African non-spiny (ANS)	
Solanum sarrachoides Sendtn.	Fl. Bras. (Martius) 10: 18, tab. 1, fig. 1-8. 1846.	Morelloid	Black nightshade
Solanum scabrum Mill.	Gard. Dict. ed. 8, no. 6. 1768.	Morelloid	Black nightshade
Solanum schimperianum Hochst. ex A.Rich.	Tent. Fl. Abyss. 2: 98. 1850.	Leptostemonum	Old World-Africa
Solanum schliebenii Werderm.	Notizbl. Bot. Gart. Berlin-Dahlem 12: 92. 1934.	Leptostemonum	Old World-Africa
Solanum schumannianum Dammer	Pflanzenw. Ost-Afrikas C (Engler): 352. 1895.	Leptostemonum	Old World-Africa
Solanum setaceum Dammer	Pflanzenw. Ost-Afrikas C (Engler): 33. 1895.	Leptostemonum	Old World-Africa
Solanum sisymbriifolium Lam.	Tabl. Encycl. 2: 25. 1794.	Leptostemonum	Sisymbriifolium
Solanum sodomeodes Kuntze	Revis. Gen. Pl. 3(3): 227. 1898.	Leptostemonum	Old World-Africa
Solanum somalense Franch.	Sert. Somal. 47. 1882.	Leptostemonum	Old World-Africa
Solanum stipitatostellatum Dammer	Abh. Königl. Akad. Wiss. Berlin 1894: 63. 1894.	Leptostemonum	Old World-Africa
Solanum supinum Dunal	Prodr. [A. P. de Candolle] 13(1): 289. 1852.	Leptostemonum	Old World-Africa
Solanum taitense Vatke	Linnaea 43: 327. 1882.	Leptostemonum	Old World-Africa
Solanum tarderemotum Bitter	Repert. Spec. Nov. Regni Veg. 10: 547. 1912.	Morelloid	Black nightshade
Solanum terminale Forssk.	Fl. Aegypt.-Arab. 45. 1775.	African non-spiny (ANS)	
Solanum tettense Klotzsch	Naturw. Reise Mossambique (Peters) 1: 237. 1861.	Leptostemonum	Old World-Africa
Solanum thomsonii C.H.Wright	Fl. Trop. Afr. [Oliver et al.] 4, 2: 217. 1906.	Leptostemonum	Old World-Africa
Solanum toliaraea D'Arcy & Rakot.	Ann. Missouri Bot. Gard. 76: 351. 1989.	Leptostemonum	Old World-Madagascar
Solanum tomentosum L.	Sp. Pl. 188. 1753.	Leptostemonum	Old World-Africa
Solanum torreanum A.E.Gonç.	Kew Bull., 52(3): 706. 1997.	Leptostemonum	Old World-Africa
Solanum torvum Sw.	Prodr. [O. P. Swartz] 47. 1788.	Leptostemonum	Torva
Solanum trichopetiolatum D'Arcy & Rakot.	Fl. Madag., Fam. 176: 130. 1994.	African non-spiny (ANS)	
Solanum triflorum Nutt.	Gen. N. Amer. Pl. 1: 128. 1818.	Morelloid	

Species	Place of original publication	Major Clade	Minor clade
Solanum trisectum Dunal	Prodr. [A. P. de Candolle] 13(1): 36. 1852.	Normania	
Solanum truncicola Bitter	Bot. Jahrb. Syst. 54: 435. 1917.	African non-spiny (ANS)	
Solanum tuberosum L.	Sp. Pl. 185. 1753.	Potato	Petota
Solanum umalilaense Manoko	PhytoKeys 16: 67. 2012.	Morelloid	Black nightshade
Solanum umtuma Voronts. & S.Knapp	PhytoKeys 8: 4. 2012.	Leptostemonum	Old World-Africa
Solanum usambarense Bitter & Dammer	Repert. Spec. Nov. Regni Veg. Beih. 16: 40. 1923.	Leptostemonum	Old World-Africa
Solanum usaramense Dammer	Pflanzenw. Ost-Afrikas C (Engler): 353. 1895.	Leptostemonum	Old World-Africa
Solanum vespertilio Aiton	Hort. Kew. ed. 1, 1: 252. 1789.	Leptostemonum	Old World
Solanum viarum Dunal	Prodr. [A. P. de Candolle] 13(1): 240. 1852.	Leptostemonum	Acanthophora
Solanum villosum Mill.	Gard. Dict. ed. 8, no. 2. 1768.	Morelloid	Black nightshade
Solanum violaceum Ortega	Nov. Pl. Descr. Dec. 56. 1798.	Leptostemonum	Old World-Tropical Asia
Solanum virginianum L.	Sp. Pl. 187. 1753.	Leptostemonum	Old World-Tropical Asia
Solanum wendlandii Hook.f.	Bot. Mag. 113: tab. 6914. 1887.	Wendlandii-Allophyllum	
Solanum wittei Robyns	Bull. Jard. Bot. État Bruxelles 17: 82. 1943.	Leptostemonum	Old World-Africa
Solanum wrightii Benth.	Fl. Hongk. 243. 1861.	Leptostemonum	Androceras-Crinitum
Solanum zanzibarense Vatke	Linnaea 43: 326. 1882.	Leptostemonum	Old World-Africa

Table 2. Country distribution of *Solanum* species in Africa (as defined here); introduced (incl. cultivated) species in brackets (epithet); taxa not included in the keys because they are known from a singleton cultivated specimen, are in *italic* type. All records based on specimens examined by the authors with verified identities. The status of *S. torvum* is not completely clear, but it is most likely to be introduced from the New World, so is treated as that here; *S. americanum*, on the other hand, appears to have a worldwide distribution, so is treated as native. The occurrence of *S. rigidum* in Senegal is doubtful, the specimen is very old and the label may be in error. Cultivated plants are often not collected, so the absence of records of commonly cultivated crops (e.g. *S. lycopersicum*, *S. macrocarpon*, *S. tuberosum*) should not be interpreted as lack of occurrence, merely as lack of collections. *Solanum diphyllum* was recorded from Eygpt by Fawzi and Habeeb (2016) with a verifiable photograph; this Mexican species is widely cultivated and easily naturalised and is likely to be spreading around the Mediterranean.

Country	Species
Algeria	*herculeum*, *linnaeanum*, *nigrum*, *villosum*
Angola	*aculeastrum*, (*aculeatissimum*), *aethiopicum*, *americanum*, *anguivi*, *anomalum*, *aureitomentosum*, (*betaceum*), *campylacanthum*, *capsicoides*, *catombelense*, *dasyphyllum*, *humile*, *lichtensteinii*, (*lycopersicum*), *macrocarpon*, *mammosum*, (*mauritianum*), *pauperum*, *scabrum*, *tarderemotum*, *terminale*, *tettense*, *villosum*
Azores	(*linnaeanum*), (*chenopodioides*), (*chrysotrichum*), (*nava?*), *nigrum*, (*maritianum*), (*pseudocapsicum*), *villosum*
Benin	*anguivi*, *anomalum*, *incanum*, *scabrum*, (*torvum*)
Botswana	*campylacanthum*, *catombelense*, *lichtensteinii*, *retroflexum*, *scabrum*, *supinum*, *tarderemotum*, *tettense*, *villosum*
Burkina Faso	*cerasiferum*, *dasyphyllum*, *incanum*, *scabrum*
Burundi	*aculeastrum*, *anguivi*, *campylacanthum*, *cyaneopurpureum*, *dasyphyllum*, *mammosum*, *memphiticum*, *tarderemotum*, *terminale*, *villosum*
Cabo Verde	(*agrarium*), *americanum*, (*lycopersicum*), *nigrum*, *rigidum*, *scabrum*, *tarderemotum*, (*torvum*)
Cameroon	*aculeastrum*, (*aculeatissimum*), *aethiopicum*, *americanum*, *anguivi*, *anomalum*, *cerasiferum*, *dasyphyllum*, (*erianthum*), *giganteum*, (*lycopersicum*), *macrocarpon*, (*mauritianum*), (*melongena*), *pseudospinosum*, *scabrum*, *tarderemotum*, *terminale*, (*torvum*), (*wendlandii*), (*wrightii*)

Country	Species
Canary Islands (Spain)	*americanum*, (*laxum*), (*lycopersicum*), (*mauritianum*), *nava*, *nigrum*, (*pseudocapsicum*), (*robustum*), *vespertilio*, (*wendlandii*)
Central African Republic (CAR)	*aculeastrum*, (*aculeatissimum*), *anguivi*, *cerasiferum*, *dasyphyllum*, *giganteum*, (*lycopersicum*), *macrocarpon*, *scabrum*, (*seaforthianum*), *terminale*, (*torvum*), (*wrightii*)
Chad	*cerasiferum*, *forskalii*, *incanum*, *tarderemotum*, *villosum*
Comoros (incl. Mayotte)	*americanum*, *macrothyrsum*, *richardii*, *scabrum*, *tarderemotum*, *terminale*, (*torvum*)
Democratic Republic of the Congo	*aculeastrum*, (*aculeatissimum*), *aethiopicum*, *anomalum*, *aureitomentosum*, *campylacanthum*, *cerasiferum*, (*chrysotrichum*), *cyaneopurpureum*, *dasyphyllum*, *giganteum*, *lichtensteinii*, (*lycopersicum*), *macrocarpon*, (*mammosum*), (*mauritianum*), (*melongena*), *memphiticum*, *richardii*, *runsoriense*, *scabrum*, (*seaforthianum*), *tarderemotum*, *terminale*, *tettense*, (*torvum*), (*viarum*), *wittei*, (*wrightii*)
Republic of the Congo	*aculeastrum*, *anomalum*, *dasyphyllum*, (*lycopersicum*), *terminale*, (*torvum*)
Cote d'Ivoire	(*aculeatissimum*), *americanum*, *anguivi*, *anomalum*, *cerasiferum*, *dasyphyllum*, (*lycopersicum*), *scabrum*, *terminale*, (*torvum*)
Djibouti	*somalense*
Egypt (incl. Hala'ib triangle)*	*coagulans*, (*diphyllum*), *dulcamara*, *elaeagnifolium*, *forskalii*, *incanum*, (*lycopersicum*), *macrocarpon*, (*melongena*), *memphiticum*, *nigrum*, *scabrum*, (*torvum*), *villosum*, *virginianum*, (*wendlandii*), (*wrightii*)
Equatorial Guinea	(*aculeatissimum*), *aethiopicum*, *americanum*, *anguivi*, *dasyphyllum*, *giganteum*, (*lycopersicum*), *pseudospinosum*, *scabrum*, *terminale*, (*torvum*)
Eritrea	*adoense*, *americanum*, *anguivi*, *campylacanthum*, *cerasiferum*, *coagulans*, *dasyphyllum*, *forskalii*, *glabratum*, *incanum*, (*lycopersicum*), *macracanthum*, *marginatum*, *melastomoides*, (*melongena*), *memphiticum*, *muricatum*, *scabrum*, *schimperianum*, *somalense*, *tarderemotum*, *terminale*, *villosum*
Ethiopia	(*aculeatissimum*), *adoense*, *americanum*, *anguivi*, *arundo*, *campylacanthum*, *capsicoides*, *cerasiferum*, *coagulans*, *cordatum*, *dennekense*, *forskalii*, *giganteum*, *glabratum*, *hastifolium*, *hirtulum*, *incanum*, *jubae*, *lanzae*, (*lycopersicum*), *macracanthum*, *macrocarpon*, *marginatum*, *melastomoides*, *memphiticum*, *muricatum*, *pampaninii*, *runsoriense*, *schimperianum*, *somalense*, *tarderemotum*, *terminale*, *tettense*, *villosum*, (*wrightii*)
Gabon	*aethiopicum*, *americanum*, *anguivi*, *anomalum*, *dasyphyllum*, *giganteum*, *macrocarpon*, *scabrum*, *terminale*, (*torvum*), (*wrightii*)
Gambia	*americanum*, *anguivi*, *cerasiferum*, *dasyphyllum*
Ghana	(*aculeatissimum*), *americanum*, *anguivi*, *anomalum*, *capsicoides*, *dasyphyllum*, (*erianthum*), *incanum*, *macrocarpon*, (*melongena*), *scabrum*, *tarderemotum*, *terminale*, (*torvum*), (*wrightii*)
Guinea	(*aculeatissimum*), *anguivi*, (*erianthum*), *scabrum*, *tarderemotum*, *terminale*, (*torvum*), (*wrightii*)
Guinea-Bissau	*americanum*, *anguivi*, *cerasiferum*, *dasyphyllum*, *terminale*
Kenya	*aculeastrum*, (*aculeatissimum*), *aethiopicum*, *agnewiorum*, *americanum*, *anguivi*, *arundo*, (*betaceum*), *campylacanthum*, *coagulans*, *cordatum*, *dasyphyllum*, *dennekense*, *forskalii*, *giganteum*, *goetzei*, *hastifolium*, *incanum*, *jubae*, *lanzae*, (*laxum*), (*lycopersicum*), *macrocarpon*, *malindiense*, *mammosum*, *mauense*, (*mauritianum*), *melastomoides*, (*melongena*), *nigriviolaceum*, *pampaninii*, *phoxocarpum*, *polhillii*, (*pseudocapsicum*), *richardii*, *runsoriense*, *schumannianum*, (*seaforthianum*), *setaceum*, *sisymbrifolium*, *somalense*, *stipitatostellatum*, *taitense*, *tarderemotum*, *terminale*, *tettense*, (*tuberosum*), *usambarense*, *usaramense*, *villosum*, (*wendlandii*), (*wrightii*), *zanzibarense*
Lesotho	(*aculeatissimum*), (*chenopodioides*), *lichtensteinii*, *retroflexum*, *scabrum*, *sodomeodes*, *tarderemotum*
Liberia	(*aculeatissimum*), *americanum*, *anguivi*, *anomalum*, *dasyphyllum*, (*lycopersicum*), (*mauritianum*), *scabrum*, *terminale*, (*torvum*)
Libya	*linnaeanum*, *nigrum*, *villosum*, *virginianum*
Madagascar	*aethiopicum*, *americanum*, *anguivi*, *batoides*, (*betaceum*), *betroka*, *bumeliifolium*, *croatii*, *erythracanthum*, *heinianum*, *humblotii*, *imamense*, *insanum*, *ivohibe*, (*lycopersicum*), *macrocarpon*, *madagascariense*, *mahoriense*, (*mauritianum*), (*melongena*), *myoxotrichum*, *myrsinoides*, (*pseudocapsicum*), *pyracanthos*, *richardii*, *sambiranense*, *scabrum*, (*seaforthianum*), *tarderemotum*, *toliaraea*, (*torvum*), *trichopetiolatum*, *truncicola*, (*tuberosum*), *violaceum*
Madeira (Portugal)	(*chenopodioides*), *dulcamara*, (*laxum*), *linnaeanum*, (*lycopersicum*), *marginatum*, *nigrum*, (*pseudocapsicum*), *trisectum*, *villosum*
Malawi	*aculeastrum*, (*aculeatissimum*), *aethiopicum*, *americanum*, *anguivi*, *aureitomentosum*, *campylacanthum*, (*chrysotrichum*), *dasyphyllum*, *giganteum*, *goetzei*, *lichtensteinii*, *macrocarpon*, *retroflexum*, *richardii*, *scabrum*, *schumannianum*, (*seaforthianum*), *tarderemotum*, *terminale*, *tettense*, (*torvum*), *villosum*, (*wendlandii*), (*wrightii*)
Mali	*cerasiferum*, *dasyphyllum*, *forskalii*, *incanum*, (*lycopersicum*), *tarderemotum*

Country	Species
Mauritania	*dasyphyllum*, *scabrum*, *villosum*
Mauritius (incl. La Réunion)	*americanum*, (*anguivi*), (*chenopodioides*), *erythracanthum*, *insanum*, (*lycopersicum*), (*mauritianum*), (*melongena*), *richardii*, *tarderemotum*, (*torvum*), *violaceum*
Morocco	*dulcamara*, *elaeagnifolium*, *forskalii*, *herculeum*, (*laciniatum*), *linnaeanum*, *nigrum*, *triflorum*, *villosum*
Mozambique	*aculeastrum*, (*aculeatissimum*), *aethiopicum*, *americanum*, *anguivi*, *aureitomentosum*, *campylacanthum*, *catombelense*, *dasyphyllum*, *giganteum*, *goetzei*, *lamprocarpum*, *lichtensteinii*, *linnaeanum*, *litoraneum*, *retroflexum*, *richardii*, *scabrum*, *stipitatostellatum*, *tarderemotum*, *tettense*, *torreanum*, (*torvum*), *usaramense*, (*viarum*), *villosum*, *zanzibarense*
Namibia	*burchellii*, *campylacanthum*, *capense*, *catombelense*, *elaeagnifolium*, *numile*, *lichtensteinii*, (*lycopersicum*), *pimpinellifolium*, *retroflexum*, *scabrum*, (*seaforthianum*), *supinum*, *tarderemotum*, *tettense*
Niger	*anguivi*, *forskalii*, *incanum*, (*lycopersicum*), *villosum*
Nigeria	*aculeastrum*, (*aculeatissimum*), *aethiopicum*, *americanum*, *anguivi*, *anomalum*, *cerasiferum*, *dasyphyllum*, (*erianthum*), *giganteum*, *incanum*, (*lycopersicum*), *macrocarpon*, *melongena*, *scabrum*, *terminale*, (*torvum*), *villosum*, (*wrightii*)
Rwanda	*aculeastrum*, (*aculeatissimum*), *anguivi*, *campylacanthum*, *cyaneopurpureum*, *dasyphyllum*, *giganteum*, *tarderemotum*, *terminale*, *wittei*
São Tome e Principe	*americanum*, *capsicoides*, (*melongena*), *scabrum*, *terminale*
Senegal	*anguivi*, *cerasiferum*, *forskalii*, *incanum*, (*lycopersicum*), *rigidum* ?, *scabrum*, *tarderemotum*
Seychelles	*aldabrense*, *americanum*, *scabrum*
Sierra Leone	*aculeatissimum*, *americanum*, *anguivi*, *capsicoides*, *dasyphyllum*, (*erianthum*), (*lycopersicum*), *macrocarpon*, (*melongena*), *scabrum*, *tarderemotum*, *terminale*, (*torvum*), (*wrightii*)
Somalia	*arundo*, *campylacanthum*, *coagulans*, *cordatum*, *cymbalariifolium*, *dasyphyllum*, *dennekense*, *forskalii*, *glabratum*, *hastifolium*, *incanum*, *jubae*, *melastomoides*, (*melongena*), *memphiticum*, *pampaninii*, *schimperianum*, *somalense*, *tarderemotum*, *tettense*, *villosum*
South Africa	*aculeastrum*, (*aculeatissimum*), *africanum*, *americanum*, *anguivi*, *burchellii*, *campylacanthum*, *capense*, *catombelense*, (*chenopodioides*), (*chrysotrichum*), *dasyphyllum*, *elaeagnifolium*, *giganteum*, *guineense*, *humile*, (*laxum*), *lichtensteinii*, *linnaeanum*, (*mauritianum*), (*pseudocapsicum*), *retroflexum*, *rubetorum*, (*sarrachoides*), (*seaforthianum*), *sisymbriifolium*, *sodomeodes*, *supinum*, *tarderemotum*, *terminale*, *tettense*, *tomentosum*, *torreanum*, (*torvum*), *triflorum*, (*viarum*), (*wrightii*)
South Sudan	*aculeastrum*, (*aculeatissimum*), *aethiopicum*, *anguivi*, *campylacanthum*, *cerasiferum*, *coagulans*, *dasyphyllum*, *giganteum*, *hastifolium*, *scabrum*, *tarderemotum*, *terminale*
Sudan (incl. Hala'ib triangle)*	*aculeastrum*, *adoense*, *aethiopicum*, *campylacanthum*, *cerasiferum*, *coagulans*, *forskalii*, *hastifolium*, *incanum*, *macrocarpon*, *memphiticum*, *nigrum*, *scabrum*, *schimperianum*, *somalense*, *tarderemotum*, *villosum*
Swaziland	*aculeastrum*, *campylacanthum*, *catombelense*, *retroflexum*, (*robustum*), (*seaforthianum*), *sisymbriifolium*, *torreanum*
Tanzania	*aculeastrum*, (*aculeatissimum*), *americanum*, *anguivi*, *arundo*, (*atropurpureum*), *aureitomentosum*, (*betaceum*), *campylacanthum*, *coagulans*, *cyaneopurpureum*, *dasyphyllum*, *dennekense*, *giganteum*, *goetzei*, *hastifolium*, *inaequiradians*, *lamprocarpum*, *lanzae*, *lichtensteinii*, (*lycopersicum*), *macrocarpon*, *mauense*, (*melongena*), *memphiticum*, (*pectinatum*), *phoxocarpum*, *polhillii*, *richardii*, (*robustum*), *scabrum*, *schliebenii*, *schumannianum*, (*seaforthianum*), *setaceum*, *stipitatostellatum*, *taitense*, *tarderemotum*, *terminale*, *tettense*, *thomsonii*, (*tuberosum*), *umalilaense*, *usambarense*, *usaramense*, *villosum*, (*wendlandii*), *wittei*, (*wrightii*), *zanzibarense*
Togo	(*aculeatissimum*), *aethiopicum*, *americanum*, *anguivi*, *anomalum*, (*melongena*), *scabrum*, *terminale*, (*torvum*)
Tunisia	*linnaeanum*, (*lycopersicum*), *nigrum*, *triflorum*, *villosum*
Uganda	*aculeastrum*, (*aculeatissimum*), *aethiopicum*, *americanum*, *anguivi*, (*betaceum*), *campylacanthum*, *cerasiferum*, *coagulans*, *cyaneopurpureum*, *dasyphyllum*, *giganteum*, *hastifolium*, *lanzae*, *macrocarpon*, *mammosum*, *mauense*, *mauritianum*, *memphiticum*, *runsoriense*, *scabrum*, *schumannianum*, (*seaforthianum*), *tarderemotum*, *terminale*, *tettense*, *villosum*, *wittei*, (*wrightii*)
Western Sahara	*villosum*
Zambia	(*aculeatissimum*), *americanum*, *anguivi*, *aureitomentosum*, *campylacanthum*, (*chrysotrichum*), *goetzei*, *lichtensteinii*, (*lycopersicum*), *retroflexum*, *richardii*, *scabrum*, (*seaforthianum*), *tarderemotum*, *terminale*, *tettense*, (*torvum*), (*tuberosum*), *villosum*, (*wendlandii*), (*wrightii*)
Zimbabwe	*aculeastrum.* (*aculeatissimum*), *anguivi*, *aureitomentosum*, (*betaceum*), *campylacanthum*, *catombelense*, *giganteum*, *lichtensteinii*, *linnaeanum*, (*mauritianum*), *retroflexum*, *richardii*, *scabrum*, (*seaforthianum*), *tarderemotum*, *terminale*, *villosum*, (*wendlandii*)

*Possession of the area known as the Hala'ib triangle is disputed between Egypt and Sudan, species occurring there are listed under both coutries.

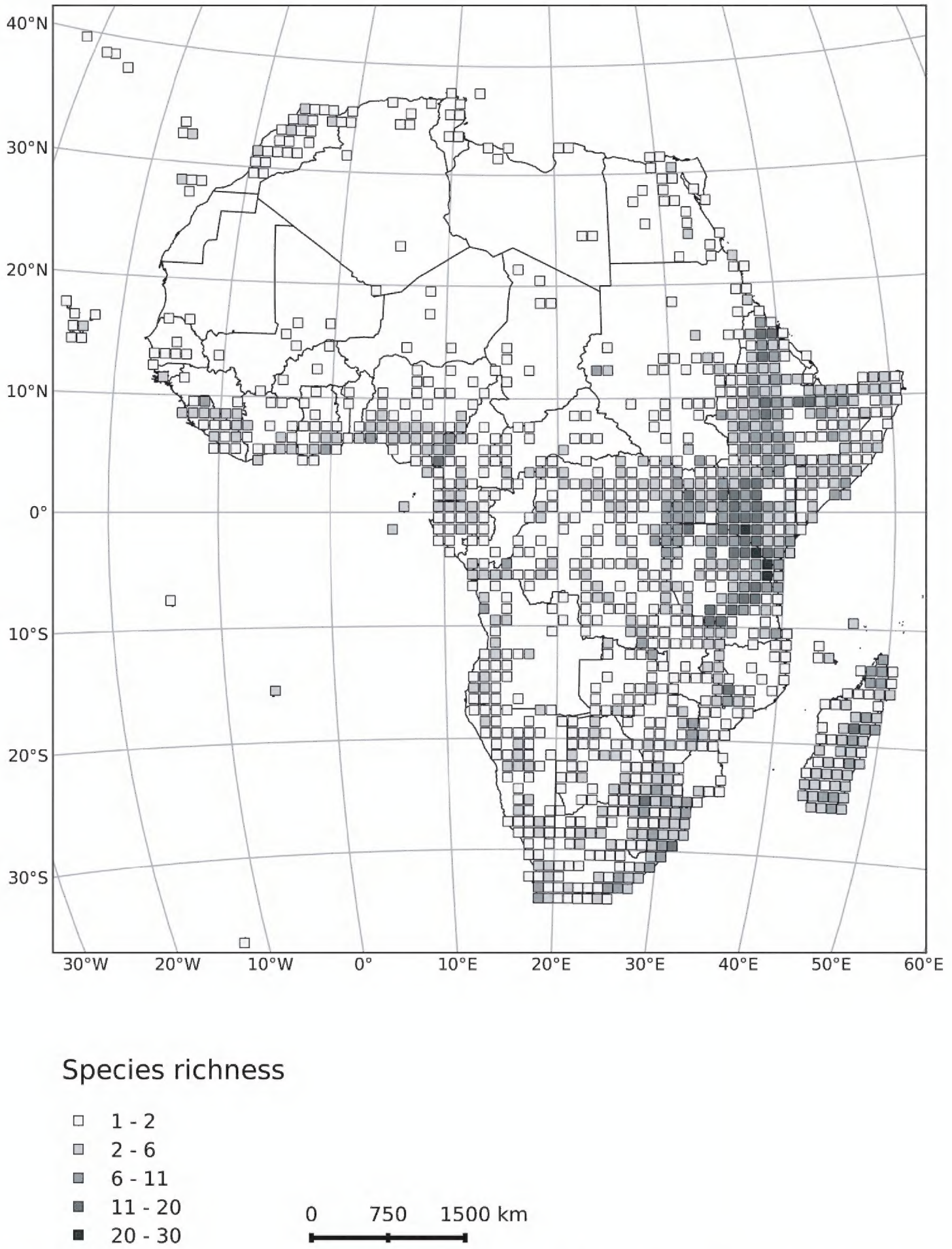

Figure 1. Heat map of *Solanum* diversity in Africa. Darker degree squares indicate greater species richness. The middle to high elevation regions of eastern Africa (Kenya/Tanzania) have the highest high species diversity, followed by secondary areas of species richness in the Ethiopian plateaus, dry areas of central Madagascar, South Africa and the area around Mount Cameroon. We have not analysed how collecting effort has influenced these patterns, but it is likely to be important. As the Leptostemonum Clade has the largest number of species in Africa, diversity in that clade drives species richness overall (see Vorontsova and Knapp 2016, figure 2). Map prepared by Sarah Ficinski.

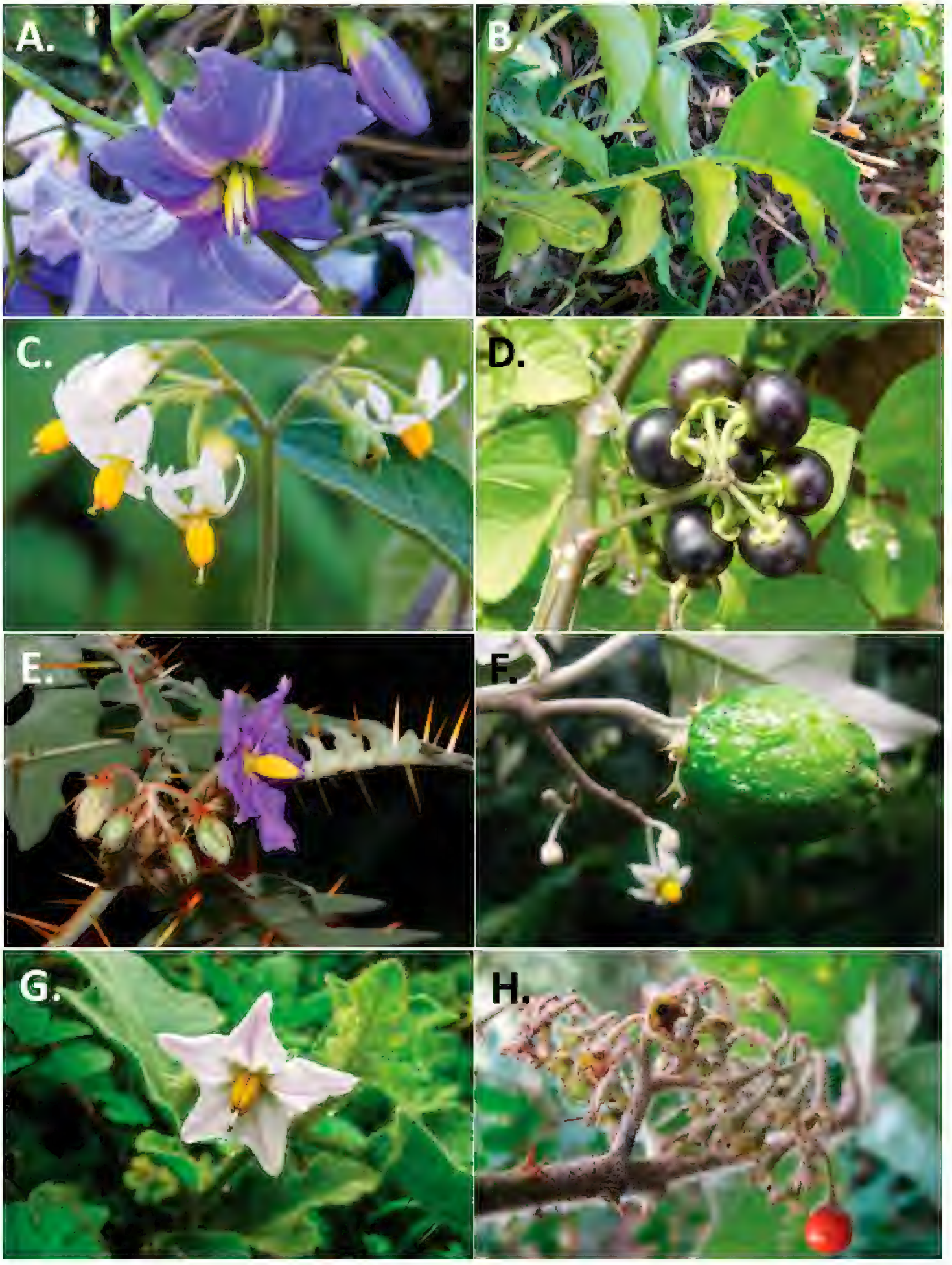

Figure 2. A, B *Solanum wendlandii* Hook.f. (Allophyllum-Wendlandii Clade) **C** *Solanum tarderemotum* Bitter (Morelloid Clade) **D** *Solanum scabrum* Mill. (Morelloid Clade) **E** *Solanum pyracanthos* Lam. (Leptostemonum Clade) **F** *Solanum aculeastrum* Dunal (Leptostemonum Clade) **G** *Solanum nigriviolaceum* Bitter (Leptostemonum Clade) **H** *Solanum usambarense* Bitter & Dammer (Leptostemonum Clade). Photos **A, B, F, G H** by M.S. Vorontosova **C, D, E** by S. Knapp.

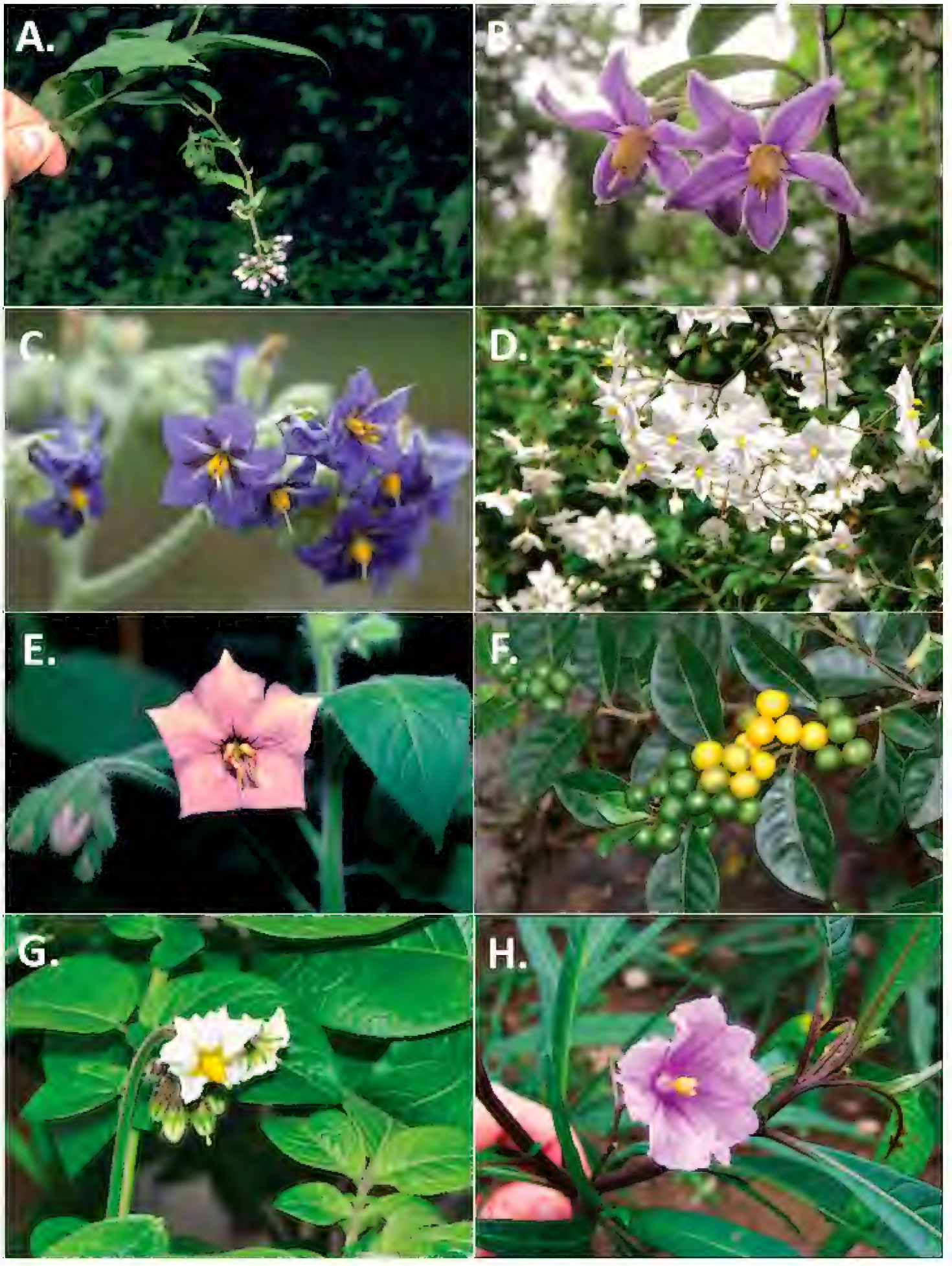

Figure 3. A *Solanum terminale* Forssk. (African non-spiny Clade) **B** *Solanum madagascariense* Dunal (African non-spiny Clade) **C** *Solanum mauritianum* Scop. (Brevantherum Clade) **D** *Solanum laxum* Spreng. (Dulcamaroid Clade) **E** *Solanum trisectum* Dunal (Normania Clade) **F** *Solanum diphyllum* L. (Geminata Clade) **G** *Solanum tuberosum* L. (Potato Clade) **H** *Solanum laciniatum* Aiton (Archaeosolanum Clade). Photos **A, C, D, E, F, G, H** by S. Knapp **B** by M.S. Vorontsova.

Four species have been recorded from this area, for which we have only seen single specimens, all of which are cultivated and not naturalised. *Solanum laciniatum* Aiton (Archaesolanum Clade), the kangaroo apple from Australia and New Zealand, has been recorded from Morocco, *S. agrarium* Sendtn. (Leptostemonum Clade, section *Acanthophora* Dunal sensu Nee 1979) from Brazil has only recently been collected in the Cape Verde Islands and *S. atropurpureum* Schrank (Leptostemonum Clade, section *Acanthophora* Dunal sensu Nee 1979) from Brazil and *S. pectinatum* Dunal (Leptostemonum Clade, section *Lasiocarpa* Dunal sensu Whalen et al. 1981) from Mexico have been recorded from Tanzania in a botanical garden. These singletons have been included in Table 1, but not in the keys below; descriptions should be checked if identification is ambiguous.

Each species name is hyperlinked to its page on Solanaceae Source (www.solanaceaesource.org) where photographs (if available), descriptions and other information can be found. An expanded key to all of the thirteen major clades of *Solanum* worldwide is in preparation (R. Hilgenhof and T. Särkinen, pers. comm.). Instructions on how to use Solanaceae source are included in the Materials and Methods.

Key to the groups of *Solanum* in continental Africa, Madagascar (incl. the islands of Réunion, the Comoros and the Seychelles), Macaronesia and the Cape Verde Islands

1a Trichomes of stems and leaves stellate or echinoid.....**2**

1b Trichomes of stems and leaves simple (unbranched) or dendritically branched, never stellate or echinoid.....**3**

2a Anthers ellipsoid in outline; inflorescences many times branched; branching dichasial; stems without prickles .....**Key 6. Brevantherum Clade**

2b Anthers tapering in outline; inflorescences branched or unbranched; branching monochasial; stems with or without prickles .... **Key 7. Leptostemonum Clade**

3a Shrubs, small trees or woody vines **4**

3b Herbs or if plants woody, only at the base; never true vines, occasionally scandent **9**

4a Stems with hooked prickles; anthers tapering..... .....***Solanum wendlandii*** **Hook.f. (Wendlandii-Allophyllum Clade)**

4b Stems without prickles; anthers ellipsoid.....**5**

5a Small trees with foetid cordate leaves; flowers waxy pink or greenish white; anther connectives enlarged; fruit a large turbinate berry with fleshy pulp; cultivated tree tomato ....***Solanum betaceum*** **Cav. (Pachyphylla [Cyphomandra] Clade)**

5b Shrubs or woody vines; leaves, flowers and anther connectives not as above **6**

6a Small shrubs with paired (geminate) leaves; flowers nodding, white; fruit held on erect pedicels, orange; cultivated or occasionally naturalised in northern Africa 7

6b Woody vines or scandent shrubs; leaves, flowers and fruit not as above; continental Africa, Madagascar; or cultivated **8**

7a Leaves lanceolate, with at least some branched trichomes on new growth; leaves of a pair more or less the same shape; inflorescence usually with 2 flowers; berry dark orange; cultivated "Jerusalem cherry" ..... ***Solanum pseudocapsicum*** **L. (Geminata Clade)**

7b Leaves ovate or elliptic, completely glabrous; leaves of a pair markedly different in shape; inflorescence with more than 2 flowers; berry pale orange; only recorded from Egypt ..... ***Solanum diphyllum*** **L. (Geminata Clade)**

8a Base of pedicel enclosed in a small sleeve of rhachis tissue usually more than 0.5 mm long; Mediterranean northern Africa; Macaronesia; if in other parts of Africa, cultivated ..... **Key 3. Dulcamaroid Clade**

8b Base of pedicel peg-like, sometimes enclosed in a small sleeve of rhachis tissue, if so the sleeve less than 0.5 mm long; Continental tropical Africa; Madagascar; native plants ..... **Key 1. African non-spiny (ANS) Clade**

9a Leaves pinnate or deeply pinnatifid **11**

9b Leaves simple (at most the margins toothed) or at most ternate **12**

10a Fleshy prostrate herbs; leaves pinnatifid, the leaflets not distinct; inflorescences unbranched ..... ***Solanum triflorum*** **Nutt. (Morelloid Clade)**

10b Spreading herbs or herbaceous scramblers, not fleshy; leaves pinnate with distinct leaflets; inflorescences branched or less often unbranched ..... **Key 5. Potato Clade**

11a Anthers dimorphic, of different sizes and two of the five with horn-like projections; Macaronesia and northern Africa ..... **Key 2. Normania Clade**

11b Anthers equal in size and shape, if unequal only slightly so; widespread or cultivated **12**

12a Trichomes simple with a single long terminal cell (bayonet hairs); fruit a large greenish berry with purple stripes (more than 3 cm diameter), with abundant solid mesocarp; herbaceous vine ..... ***Solanum muricatum*** **Aiton (Potato Clade)**

12b Trichomes simple or branched; fruit variously coloured (usually less than 1 cm in diameter), with juicy mesocarp; annual or short-lived perennial herbs ..... **Key 4. Morelloid Clade**

Key 1. African non-spiny (ANS) Clade (descriptions Knapp and Vorontsova 2016)

1a Leaves glabrous on both surfaces **2**

1b Leaves with at least some pubescence on either surface (this sometimes sparse along veins and midrib) **10**

2a Inflorescence few-flowered, unbranched (at most furcate in *Solanum betroka*) .. **3**
2b Inflorescence many flowered, usually many times branched **5**
3a Flowers appearing fasciculate and axillary; corolla usually somewhat campanulate; fruit orange; South Africa ..... ***Solanum guineense*** **L.**
3b Flowers not appearing fasciculate; corolla stellate, the petals spreading or reflexed; fruit colour green, black or not known, never orange; Madagascar **4**
4a Leaves clustered on short shoots; calyx lobes deltate, not divided to base; dry forests ..... ***Solanum betroka*** **D'Arcy & Rakot.**
4b Leaves not clustered on short shoots; calyx lobes long triangular, divided to the base; wet forests ..... ***Solanum truncicola*** **D'Arcy & Rakot.**
5a Flowers or fruits (or pedicel scars) in tightly packed groups on individual branches (these sometimes very short and the inflorescence appearing spicate) ..... ***Solanum terminale*** **Forssk.**
5b Flowers spaced on the open inflorescence, often unevenly so **6**
6a Leaves clustered on short shoots..... ***Solanum betroka*** **D'Arcy & Rakot.**
6b Leaves spaced along the stem 7
7a Anthers opening by pores that elongate with age; mountains of continental Africa ..... ***Solanum runsoriense*** **C.H.Wright**
7b Anthers opening by delineated pores that do not elongate with age; Madagascar **8**
8a Leaves fleshy, thick and coriaceous, the venation not visible in dry specimens; fruit with thick pericarp (woody?) .... ***Solanum myrsinoides*** **D'Arcy & Rakot.**
8b Leaves membranous to coriaceous, not markedly thick and fleshy, the venation visible in dry specimens; fruit with thin pericarp, the seeds visible through the berry wall **9**
9a Petioles with long, simple trichomes (these not extending to the lamina); seeds 4–8 per berry; inflorescence axis thin and delicate .... ***Solanum trichopetiolatum*** **D'Arcy & Rakot.**
9b Petioles glabrous or with minute dendritic trichomes; seeds 20–40 per berry; inflorescence axis robust..... ***Solanum madagascariense*** Dunal
10a Leaf trichomes simple (unbranched) **11**
10b Leaf trichomes branched (dendritic to echinoid)..... **16**
11a Inflorescence axis unbranched, the flowers closely spaced..... **12**
11b Inflorescence axis branched, often many times so..... **13**
12a Leaves clustered along stem; fruit orange; South Africa .... ***Solanum guineense*** **L.**
12b Leaves spaced along shoots; fruit purple or black; Madagascar .... ***Solanum truncicola*** **D'Arcy & Rakot.**
13a Flowers or fruits (or pedicel scars) in tightly packed groups on individual branches (these sometimes very short and the inflorescence appearing spicate) ..... ***Solanum terminale*** **Forssk.**
13b Flowers spaced on the open inflorescence, often unevenly so **14**

14a Stems strongly quadrangular; at least some leaves with shallow lobes; plants of seashore and dune habitats..... ***Solanum africanum*** **Mill.**

14b Stems terete; leaves not lobed; plants of forests and forest edges.....**15**

15a Leaf pubescence very sparse, confined to the midrib or near the petiole; flowers not heterostylous; Madagascar... ***Solanum trichopetiolatum*** **D'Arcy & Rakot.**

15a Leaf pubescence variable, not very sparse, along veins and lamina; flowers heterostylous; mountains of continental Africa ..... ***Solanum runsoriense*** **C.H.Wright**

16a Abaxial leaf surfaces with tufts of trichomes in the vein axils (domatia).....**17**

16b Abaxial leaf surfaces with trichomes on lamina and/or along veins, not with prominent tufts in the vein axils (domatia) **19**

17a Inflorescence many times branched, open and with many flowers (more than 20); calyx lobes broadly deltate; petioles to 4 cm long, thin and flexuous; Mayotte (Comoros) .....***Solanum macrothyrsum*** **Dammer**

17b Inflorescence furcate, more congested and with fewer flowers (fewer than 20); calyx lobes deltate; petioles to 2.5 cm long, thicker; Madagascar.....**18**

18a Calyx lobes 0.8–2 mm long; inflorescences with 10–16 flowers ....***Solanum ivohibe*** **D'Arcy & Rakot.**

18b Calyx lobes 4–6 mm long; inflorescences with 3–10 flowers .... ***Solanum sambiranense*** **D'Arcy & Rakot.**

19a Abaxial leaf surfaces evenly pubescent on veins and lamina.....**20**

19b Abaxial leaf surfaces pubescent only along the veins and midrib, the trichomes not extending to the lamina.....**22**

20a Anther pores lengthening to slits with age; flowers heterostylous; leaves evenly distributed along branches; mountains of continental Africa..... ..... ***Solanum runsoriense*** **C.H.Wright**

20b Anther pores not lengthening to slit with age; flowers not heterostylous; leaves usually at least somewhat clustered on short shoots; Madagascar.....**21**

21a Leaves densely pubescent with golden (when dry) loosely dendritic trichomes; flowers more than 2 cm in diameter; anthers 4–6 mm long; widespread in Madagascar..... ***Solanum imamense*** **Dunal**

21b Leaves sparsely pubescent with white (when dry) congested dendritic trichomes; flowers 2 cm in diameter or less; anthers 3.5–4 mm long; dry forests of southern Madagascar ..... ***Solanum betroka*** **D'Arcy & Rakot.**

22a Inflorescence unbranched, with few flowers; pedicels 1.8–4.5 cm long .... ***Solanum humblotii*** **Bitter**

22b Inflorescence many times branched, with many flowers; pedicels 0.8–1.2 cm long.....**23**

23a Anther pores lengthening to slits with age; flowers heterostylous; pedicels with pubescence like the inflorescence rhachis; mountains of continental Africa ..... ***Solanum runsoriense*** **C.H.Wright**

23b Anther pores not lengthening to slit with age; flowers not heterostylous; pedicels always glabrous; Madagascar.....***Solanum madagascariense*** **Dunal**

Key 2. Normania clade (descriptions on Solanaceae Source)

1a Leaves shallowly lobed, pubescent with long, tangled eglandular trichomes; anthers tapering, horned near the base, tightly connivent; seeds more than 5 mm long; fruit a dry berry; Mediterranean ..... ***Solanum herculeum*** **Bohs**

1b Leaves simple or ternate, glabrous or pubescent, but the trichomes not long and tangled, glandular; anthers markedly horned, spreading; seeds less than or equal to 5 mm long; fruit a brightly coloured, juicy berry; laurisylva forest in Macaronesia..... **2**

2a Leaves simple or ternate, the base truncate or cordate if leaves unlobed; anthers yellow, horned in lower third; berry bright red; Madeira .... ***Solanum trisectum*** **Dunal**

2b Leaves simple, the base cordate; anthers black, horned about halfway up from the base; berry orange or red; Tenerife, Canary Islands..... ..... ***Solanum nava*** **Webb & Berthel.**

Key 3. Dulcamaroid clade (descriptions in Knapp 2013 and on Solanaceae Source)

1a Buds turbinate and strongly pointed; petals strongly reflexed, with shiny green dots at the base of each; anthers tightly connivent with "glue"; fruit a shiny red berry, often ellipsoid; native plants in Mediterranean northern Africa..... ***Solanum dulcamara*** **L.**

1b Buds rounded, often somewhat inflated; petals spreading, without shiny green dots; anthers not tightly connivent with "glue"; fruit red or black, globose; cultivated plants, occasionally naturalised throughout the region **2**

2a Flowers white; anthers on equal filaments; leaves with axillary tufts of trichomes on the lower surfaces (domatia), usually simple, occasionally pinnatifid; berry (very rarely) black..... ***Solanum laxum*** **Spreng.**

2b Flowers purple; one filament slightly longer than the other 4; leaves completely glabrous, pinnatifid, rarely simple; berry bright shiny red .... ***Solanum seaforthianum*** **Andrews**

Key 4. Morelloid clade (descriptions in Särkinen et al. 2018 and on Solanaceae Source)

1a Leaves shallowly to deeply pinnatifid ..... ***Solanum triflorum*** **Nutt.**

1b Leaves entire to sinuate-dentate **2**

2a Glandular trichomes present (e.g. along stems, petioles and leaves), plants usually sticky to touch when fresh..... **3**

2b Glandular trichomes absent (e.g. along stems, petioles and leaves), plants not sticky to touch when fresh **14**

3a Anthers less than 1.8 mm long..... **4**

3b Anthers more than or equal to 1.8 mm long **7**

4a Inflorescences with 10–40 flowers; pedicels spaced 1–2 mm apart, sharply bent at the base (near articulation point) in flower and fruit ..... ***Solanum tarderemotum*** **Bitter**

4b Inflorescences with 2–5(-10) flowers; pedicels spaced 0–1 mm apart, nodding, erect or spreading in flower and fruit, reflexed and slightly curved in some species in fruit but never in flower **5**

5a Calyx lobes 1–1.5 mm long in flower; fruiting calyces not accrescent, the tube remaining 1–1.7 mm long and lobes 1–1.5 mm long; fruit black when ripe, not markedly shiny, with a glaucous cast..... ***Solanum retroflexum*** **Dunal**

5b Calyx lobes 1.5–2.5 mm long in flower; fruiting calyces accrescent, the tube 3–4 mm long and lobes 2.5–8.0 mm long; fruit green when ripe, shiny **6**

6a Leaf bases attenuate to cuneate; inflorescences mostly intermodal, with 4–8(-10) flowers; pedicels spaced 0.3–1 mm apart; calyx lobes 1.7–2.5 mm long; corollas with yellow-green central eye with black-purple V-shaped margins; anthers 1.0–1.4 mm long; berries dark green to green-brown marbled with white lines, becoming usually translucent and glossy, lower half of berries covered with enlarged calyces but berry mostly visible; seeds brown; stone cells (1-)2–3, these 0.5 mm in diameter; northern Africa ..... ***Solanum nitidibaccatum*** **Bitter**

6b Leaf bases truncate; inflorescences mostly leaf-opposed, with 2–5(-7) flowers; pedicels spaced 0(-1) mm apart; calyx lobes 1.5–2.0 mm long; corolla with yellow-green or translucent basal star without black-purple colouration; anthers 1.2–2.0 mm long; berries pale green, shiny becoming dull, opaque, usually completely enveloped by enlarged calyces; seeds pale yellow; stone cells 4–6, these (0.5-)0.8–1 mm in diameter; only known from South Africa ..... ***Solanum sarrachoides*** **Sendtn.**

7a Anthers more than or equal to 2.8 mm long **8**

7b Anthers less than 2.8 mm long..... **9**

8a Inflorescences with bracteoles present in most individuals; buds narrowly ellipsoid; corolla deeply stellate, the lobes narrowly lanceolate; berries with more than 30 stone cells ..... ***Solanum triflorum*** **Nutt.**

8b Inflorescences never with bracteoles; buds globose, ovoid or narrowly ellipsoid; corolla rotate-stellate, the lobes long- triangular with rounded tips; berries with (0-)2–4 stone cells ..... ***Solanum memphiticum*** **Forssk.**

9a Calyx lobes appressed to spreading in fruit, never strongly reflexed **10**

9b Calyx lobes strongly reflexed in fruit **12**

10a Calyx accrescent in fruit, calyx tube 3–4 mm long and lobes 2.5–8 mm long ..... ***Solanum sarrachoides*** **Sendtn.**

10b Calyx not accrescent in fruit, calyx tube 1–2 mm long and lobes 1–1.5 mm long **11**

11a Buds ellipsoid; calyx tube 1.5–2.0 mm long, lobes 1–1.5 mm long, elongate-deltate with rounded tips; fruiting pedicels persist when fruits mature and fall off; Cameroon line (Cameroon and Equatorial Guinea), above 2,000 m elevation ..... ***Solanum pseudospinosum*** **C.H.Wright**

11b Buds subglobose; calyx tube 0.8–1.0 mm long, lobes 0.5–0.8 mm long, triangular with rounded to acute tips; fruiting pedicels generally do not persist and fall off with maturing fruits; in continental Africa only in South Africa and around the Mediterranean..... ***Solanum nigrum*** **L.**

12a Leaves rhomboidal to lanceolate; filaments 1.2–1.5 mm long, anthers 1.3–1.8(-2) mm long; seeds 1.6–1.8 mm long and 1.3–1.5 mm wide..... ***Solanum retroflexum*** **Dunal**

12b Leaves broadly to narrowly ovate to elliptic; filaments 0.5–1.3 mm long; anthers 1.8–2.5 mm long; seeds 1.8–2.2 mm long and 1.5–1.7 mm wide.... **13**

13a Calyx with broad and relatively transparent sinuses, lobes elliptic to triangular, rounded at tip; free part of the filaments 1.0–1.3 mm long; mature berries slightly ellipsoid, shiny yellow, orange or red; stone cells always absent ..... ***Solanum villosum*** **Mill.**

13b Calyx with narrow, sharp triangular sinuses, lobes deltate with acute or rounded tips; free part of the filaments 0.5–0.7 mm long; mature berries round, dull black or green; stone cells 0–4; in Africa only in South Africa and around the Mediterranean ..... ***Solanum nigrum*** **L.**

14a Anthers less than 1.8 mm long..... **15**

14b Anthers more than or equal to 1.8 mm long..... **17**

15a Pedicels spaced 1–2 mm apart, pedicels sharply bent at the base (near the articulation point) in flower and fruit ..... ***Solanum tarderemotum*** **Bitter**

15b Pedicels spaced 0–0.5 mm apart, pedicels nodding, erect or spreading in flower and fruit..... **16**

16a Leaves with entire margins, occasionally sinuate-dentate; calyx lobes 0.3–0.5 mm long in flower, 1(-2) mm in fruit; mature fruits black, the surface very shiny..... ***Solanum americanum*** **Mill.**

16b Leaves shallowly toothed, occasionally entire; calyx lobes 1.0–1.5 mm long in flower, 1.5–2 mm in fruit; mature fruits purple-black or green, the surface dull..... ***Solanum retroflexum*** **Dunal**

17a Anthers less than 2.8 mm long..... **18**

17b Anthers more than or equal to 2.8 mm long..... **27**

18a Berries without stone cells..... **19**

18b Berries with 2–22 stone cells..... **24**

19a Pedicels persisting and not dropping with mature fruits; calyx lobes in fruit mostly strongly reflexed **20**

19b Pedicels dropping with mature fruits; calyx lobes in fruit appressed to slightly spreading, rarely strongly reflexed **22**

20a Leaves rhomboidal to lanceolate; filaments 1.2–1.5 mm long, anthers 1.3–1.8(-2) mm long; seeds 1.6–1.8 mm long and 1.3–1.5 mm wide..... ***Solanum retroflexum*** **Dunal**

20b Leaves broadly to narrowly ovate to elliptic; filaments 0.5–1.3 mm long; anthers 1.8–2.5 mm long; seeds 1.8–2.2 mm long and 1.5–1.7 mm wide....**21**

21a Calyx with broad and relatively transparent sinuses, lobes elliptic to triangular, rounded at tip; filaments 1.0–1.3 mm long; mature berries slightly ellipsoid, shiny yellow, orange or red; stone cells always absent ..... ***Solanum villosum*** **Mill.**

21b Calyx with narrow, sharp triangular sinuses, lobes deltate with acute tips; filaments 0.5–0.7 mm long; mature berries round, dull black or green; stone cells generally absent (2–4 stone cells common in Asian material)..... ***Solanum nigrum*** **L.**

22a Buds elongate-oblong; fruiting peduncles strongly deflexed at the base (bent downwards at junction with the stem) ..... ***Solanum chenopodioides*** **Lam.**

22b Buds ellipsoid to subglobose; fruiting peduncles straight or ascending **23**

23a Pedicels spaced 1–2 mm apart, sharply bent at the base (near the articulation point) in flower and fruit; seeds 1.5–2 mm long and 1–1.5 mm wide..... ***Solanum tarderemotum*** **Bitter**

23b Pedicels spaced 0–0.7 mm apart, straight, spreading or reflexed in flower and fruit; seeds 1.8–2 mm long and 1.5–1.6 mm wide..... ***Solanum nigrum*** **L.**

24a Prostrate herb; leaves narrowly elliptic to lanceolate, base strongly attenuate; inflorescences with 1–5 flowers; pedicels stout and spreading; calyx lobes linear-oblong with rounded apices; mountains of Ethiopia ..... ***Solanum hirtulum*** **C.H.Wright**

24b Upright or spreading herb; leaves broadly ovate to elliptic, base acuminate, acute, obtuse, truncate to abruptly attenuate; inflorescences with 2–40 flowers; pedicels thinner, spreading to strongly reflexed; calyx lobes triangular, broadly deltoid or ovate with acute to rounded apices.....**25**

25a Pedicels strongly bent downwards at the base (near articulation point) in flower and fruit..... ***Solanum tarderemotum*** **Bitter**

25b Pedicels spreading, stout or pendent in flower, occasionally recurved in fruit but never strongly bent downwards at the base **26**

26a Inflorescences unbranched or more often branched, often with small leaves (bracteoles?); calyx lobes broadly deltate to mere enations of the rim; style exserted 1.0–1.5 mm beyond anther cone; mature berries 3–4(-5) mm in diameter, dull yellowish brown ..... ***Solanum umalilaense*** **Manoko**

26b Inflorescences unbranched, never with small leaves; calyx lobes triangular; style exserted 0–1 mm beyond anther cone; mature berries 6–10 mm in diameter, dull black..... ***Solanum nigrum*** **L.**

27a Inflorescences with bracteoles present in most individuals; buds narrowly elliptic; berries with more than 30 stone cells ..... ***Solanum triflorum*** **Nutt.**

27b Inflorescences never with bracteoles; buds globose, ovoid or narrowly ellipsoid; berries with 0–14 stone cells.....**28**

28a Berries with 2–14 stone cells; leaf base strongly attenuate ..... ***Solanum hirtulum*** **C.H.Wright**

28b Berries without stone cells; leaf base not strongly attenuate..... **29**

29a Buds elongate-oblong; calyx lobes broadly deltate to triangular with acute tips; fruiting peduncles strongly bent at the base near junction with the stem; fruiting pedicels thin, reflexed and slightly recurved; seeds 1.2–1.4 mm long and 1.0–1.2 mm wide..... ***Solanum chenopodioides*** **Lam.**

29b Buds globose-subglobose; calyx lobes broadly deltate with rounded tips; fruiting peduncles straight; fruiting pedicels stout, erect and spreading; seeds 2–2.8 mm long and 1.5–1.8 mm wide ..... ***Solanum scabrum*** **Mill.**

Key 5. Potato clade (descriptions on Solanaceae Source)

1a Flowers yellow; anthers tightly connivent and tapering to a beak-like tip; fruit a bright red berry; cultivated tomatoes..... **2**

1b Flowers white or purple; anthers ellipsoid, not tapering to a beak-like tip; fruit green or whitish green (often with purple stripes)..... **3**

2a Corolla lobes deltate to triangular; anther cone stout, the style included; berry usually more than 1 cm in diameter (often much larger), fewer than 20 per infructescence; leaflets with serrate margins; cultivated tomato ..... ***Solanum lycopersicum*** **L.**

2b Corolla lobes narrowly triangular; anther cone long and narrow, the style exserted; berry less than 1 cm in diameter, more than 20 per infructescence; leaflets with entire margins; cultivated currant tomato ..... ***Solanum pimpinellifolium*** **L.**

3a Leaves at most ternate, usually simple; fruit a berry more than 3 cm in diameter; plant not bearing underground tubers; cultivated pepino ..... ***Solanum muricatum*** **Aiton**

3b Leaves pinnate; fruit a berry less than 3 cm in diameter; plant bearing underground tubers; cultivated potato ..... ***Solanum tuberosum*** **L.**

Key 6. Brevantherum clade (descriptions on Solanaceae Source)

1a Young flower buds turbinate; calyx densely pubescent within over entire surface; young stems sulcate; axillary leaves absent..... ***Solanum erianthum*** **D.Don**

1b Young flower buds oblong to orbicular; calyx lobes pubescent within only in distal quarter; young stems terete; axillary leaves common ..... ***Solanum mauritianum*** **Scop.**

Key 7. Leptostemonum clade (descriptions in Vorontsova and Knapp 2016 and on Solanaceae Source)

1a Young stems and petioles noticeably winged; mature fruit densely pubescent; invasive plant in Tanzanian highlands and South Africa ..... ***Solanum robustum*** **H.Wendl.**

1b Young stems and petioles not markedly winged (terete or slightly ridged); mature fruit glabrous; native or invasive, widespread..... **2**

2a Flowers with stamens of differing lengths (due either to unequal anthers or unequal filaments or both); arid eastern and north-eastern Africa **3**

2b Flowers with all stamens equal in length; widespread **8**

3a Corolla strongly zygomorphic, with the two lower lobes much larger; flowers often enantiostylous; Canary Islands **4**

3b Corolla only weakly zygomorphic, the lower lobes somewhat but not markedly larger; flowers not enantiostylous; continental Africa **5**

4a Leaves narrowly elliptic to lanceolate; calyx lobes linear and awn-like; corolla always 5-merous; ripe berry orange; Gran Canaria ... ***Solanum lidii*** **Sunding**

4b Leaves ovate; calyx lobes linear; corolla often 4-merous; ripe berry yellow or yellowish green; Tenerife and Gran Canaria ..... ***Solanum vespertilio*** **Aiton**

5a Leaves orbicular to reniform, 1.2–2.5 cm long, wider than long; petioles longer than leaves; rare in north-eastern Somalia..... ***Solanum cymbalariifolium*** **Chiov.**

5b Leaves ovate to elliptic or lanceolate, 2–14 cm long, longer than wide; petioles shorter than leaves; arid eastern and north-eastern Africa **6**

6a Stem prickles dense, acicular, less than 0.5 mm wide at base, pale yellow; fruit fully concealed by the accrescent calyx ..... ***Solanum coagulans*** **Forssk.**

6b Stem prickles absent or sparse, if present wider than 1 mm at base, yellow to orange or brown; fruit at least partly exposed..... **7**

7a Leaves subentire to lobed; anthers of equal length; seeds very dark brown to almost black..... ***Solanum melastomoides*** **C.H.Wright**

7b Leaves entire; one anther much longer than the others; seeds dull yellow to orange-brown ..... ***Solanum somalense*** **Franch.**

8a Flower one per inflorescence, peduncle and rhachis absent; corolla pentagonal, lobed for 1/4–1/3 of the way to the base, 0.9–1.3 cm in diameter; southern Africa..... ***Solanum supinum*** **Dunal**

8b Flower usually more than one per inflorescence, peduncle and/or rhachis present in at least some inflorescences; corolla usually stellate, lobed for more than 1/3 of the way to the base or, if lobed, for 1/4–1/3 of the way to the base then corolla of long-styled flowers broader than 1.3 cm in diameter; widespread.... **9**

9a Trichomes on young stems and adaxial (upper) surfaces of the leaves simple only, never stellate..... **10**

9b Trichomes on young stems and adaxial (upper) surfaces of the leaves stellate... **13**

10a Flowers pale bluish purple; anthers 8–12.5 mm; fruit globose or extended into a "nipple" ..... ***Solanum mammosum*** **L.**

10b Flowers white or greenish white; anthers 5–7.5 mm; fruit globose **11**

11a No stellate hairs anywhere on the plant; fruit bright orange at maturity; seeds winged, 4–6 mm long..... ***Solanum capsicoides*** **All.**

11b Stellate hairs almost always present on the abaxial (lower) surface of the leaves; fruit yellow at maturity; seeds not winged, 1.8–2.8 mm long..... **12**

12a Leaf lobes 2–3 pairs, extending 1/3–1/2 distance to the midvein; calyx lobes 5–6.5 mm long, often caudate ..... ***Solanum aculeatissimum*** **Jacq.**

12b Leaf lobes 3–5 pairs, extending less than 1/3 of the distance to the midvein; calyx lobes 0.8–2 mm long, acute ..... ***Solanum viarum*** **Dunal**

13a Leaves entire, 3–10 times longer than wide; shrubs erect, 1–6 m tall; stem trichomes with partly fused rays; southern Madagascar..... **14**

13b Leaves entire or lobed, 1–3(8) times longer than wide; shrubs erect, scandent or climbing, 0.2–6 m tall; if leaves entire and more than 3 times longer than wide, then shrub less than 1 m tall and not in southern Madagascar; stem trichomes with free rays **16**

14a Leaves 9–13(20) cm long; corolla 2–3.1 cm in diameter; juvenile branches with dark red prickles; south-eastern Madagascar..... ..... ***Solanum croatii*** **D'Arcy & Keating**

14b Leaves 1.5–7 cm long; corolla 1–2 cm in diameter; juvenile branches with grey-brown or red-brown prickles; south-western Madagascar **15**

15a Leaf blades 3–7 cm long, concolorous to weakly discolorous, yellow-green... ..... ***Solanum bumeliifolium*** **Dunal**

15b Leaf blades 1.5–3(4) cm long, strongly discolorous, green-brown adaxially and glaucous abaxially..... ***Solanum heinianum*** **D'Arcy & Keating**

16a Prickles and leaf venation noticeably dark orange to red, contrasting with the yellow-green to red-green leaf surface; southern Madagascar .... ***Solanum pyracanthos*** **Lam.**

16b Prickles and leaf venation not a contrasting colour, yellow to green or red-brown; widespread or naturalised..... **17**

17a Mature fruit green, never developing to bright yellow, orange or red; plants weakly andromonoecious; fruits 1–1.5 cm in diameter **18**

17b Mature fruit yellow, orange or red; plants hermaphroditic or andromonoecious, fruits 0.5–6 cm in diameter, if andromonoecious, then fruits more than 1.5 cm in diameter..... **19**

18a Shrub to tree 1.5–9 m tall; young stems and leaves densely ferruginous pubescent; trichomes on the inflorescences and pedicels not glandular; prickles straight to slightly curved..... ***Solanum chrysotrichum*** **Schltdl.**

18b Shrub to 3 m; young stems and leaves pubescent green to brownish; trichomes on the inflorescences and pedicels glandular; prickles curved..... ..... ***Solanum torvum*** **Sw.**

19a Mature fruit yellow or greenish yellow, 1.5–5(6) cm in diameter; corolla on long-styled flowers (1.3)2–6 cm in diameter; plants mostly andromonoecious **20**

19b Mature fruit orange to red, 0.5–1.2(1.7) cm in diameter; if mature fruit orange (1)1.5–2.5(5) cm in diameter, the plant cultivated; corolla on long-styled flowers 0.8–3 cm in diameter; plants mostly hermaphroditic **45**

20a Cultivated tree 5–10 m tall with copious flowers; corolla bright purple aging to white with both colours usually present in an inflorescence, 5.5–8 cm in diameter ..... ***Solanum wrightii*** **Benth.**

20b Wild plants or cultivated vegetables, less than 6 m tall; corolla white to mauve or purple with the colour constant within each individual, 1.6–6 cm in diameter **21**

21a Petiole usually decurrent, leaf bases attenuate (cuneate); trichomes on abaxial leaf surface (if present) stalked with 4(5) rays **22**

21b Petiole never decurrent, leaf bases cordate to cuneate; trichomes on abaxial leaf surface (if present) sessile or stalked with 6–16 rays **23**

22a Plant clearly stellate-pubescent and armed, drying yellow-green to red-brown; wild plant ..... ***Solanum dasyphyllum*** **Schumach, & Thonn.**

22b Plant usually glabrous and unarmed, drying a distinctive red-brown colour; cultivated plant ..... ***Solanum macrocarpon*** **L.**

23a Climbers or scandent plants **24**

23b Plants erect or rarely semi-scandent **27**

24a Prickles on young stems straight **25**

24b Prickles on young stems strongly curved **26**

25a Prickles pale straw-yellow, to 20 mm long; petiole with sessile stellate trichomes; corolla ca. 2.5 cm in diameter; style strongly curved; Mediterranean northern Africa (adventive from Asia) ..... ***Solanum virginianum*** **L.**

25b Prickles yellow (but not straw-coloured) or brown; petiole trichomes usually stalked; corolla 3.5–5 cm in diameter; style straight; southern Kenya..... ..... ***Solanum nigriviolaceum*** **Bitter**

26a Corolla white, 1.3–1.6 cm in diameter; seeds 5.5–6 mm long; Kenyan mountains ..... ***Solanum agnewiorum*** **Voronts.**

26b Corolla mauve to purple, 3.5–6 cm in diameter; seeds 3–4 mm long; eastern and southern Africa, Madagascar ..... ***Solanum richardii*** **Dunal**

27a Calyx inflated, fully covering the berry at maturity; young stems densely covered with straight prickles; northern Madagascar .... ***Solanum mahoriense*** **D'Arcy & Rakot.**

27b Calyx not inflated, the berry exposed at maturity; young stems prickly or unarmed; widespread **28**

28a Corolla lobed for more than half way to the base; shrubs or trees up to 6 m; variety of habitats **29**

28b Corolla lobed for half way to the base or less; small shrubs up to 2 m; weeds of open arid environments or cultivated crops; relatives of the eggplant **35**

29a Leaves 8–18 cm long, strongly discolorous; young fruits plain green; seeds 3.5–4.5 mm long; wet upland habitats.....**30**

29a Leaves 2–8 cm long, concolorous or sometimes discolorous; young fruits striped in different shades of green; seeds 2.2–3.5 mm long; arid upland or lowland habitats.....**32**

30a Fruit globose, never apiculate, 1.4–1.7 cm in diameter, 4–10 per infructescence; young stems with yellow (when dry) long-stalked trichomes, the stalks 1–3 mm.....***Solanum thomsonii*** **C.H.Wright**

30b Fruit turbinate or cone-shaped, sometimes globose, usually somewhat apiculate, 2.8–5 x 1.8–4.5 cm, 1–3(5) per infructescence; young stems usually lacking long-stalked yellow (when dry) trichomes.....**31**

31a Fruit distinctly turbinate or cone-shaped, 2.8–3.7 x 1.8–2.2 cm; leaves on fertile branches elliptic and subentire, 6–8 x 2.5–4 cm, ca. 2.5 times longer than wide; 2100–3000 m elevation.....***Solanum phoxocarpum*** **Voronts.**

31b Fruit globose, usually somewhat apiculate, 3–5 x 2–4.5 cm; leaves on fertile branches ovate(elliptic) and lobed(subentire), 8–15 x 6–12 cm, 1.5–2 times longer than wide; 1200–2100(3200) m elevation ....***Solanum aculeastrum*** **Dunal**

32a Prickles straight or occasionally curved; petioles 1/3–2/3 as long as the leaf blades.....***Solanum polhillii*** **Voronts.**

32b Prickles on young stems strongly curved; petioles less than 1/3 of the leaf blade length.....**33**

33a Leaves entire, densely stellate-pubescent on both sides; eastern and north-eastern African highlands.....***Solanum dennekense*** **Dammer**

33b Leaves lobed, adaxially glabrescent; eastern and north-eastern Africa **34**

34a Leaves 2–4 cm long; curved prickles on young stems 5–10 mm long; eastern and north-eastern Africa .....***Solanum arundo*** **Matthei**

34b Leaves 6–8 cm long; curved prickles on young stems 1–3 mm long; coastal Kenya, rare ..... ***Solanum malindiense*** **Voronts.**

35a Fruit with soft pericarp, in a variety of shapes and colours, edible; common fasciation in the flowers (e.g. increase in the number of flower parts up to 8), inflated ovaries; cultivated species .....***Solanum melongena*** **L.**

35a Fruit spherical, yellow, with comparatively hard pericarp, not edible; flowers 5-merous; wild plants **36**

36a Leaves lobed with primary and secondary lobes, the primary lobes extending 2/3–3/4 of the distance to the midvein and secondary lobes always present; southern Africa and northern African coasts around the Mediterranean..... .....***Solanum linnaeanum*** **Hepper & P.M-L.Jaeger**

36b Leaves entire or lobed, lobes extending up to 2/3 of the distance to the midvein, secondary lobes usually not present; widespread.....**37**

37a Leaf margins and venation nearly white and contrasting with greenish red-brown adaxial leaf surface; trichomes on the abaxial surface of the leaves with 10–17 rays; Ethiopian highlands..... ***Solanum marginatum*** **L.f.**

37b Leaf margins and venation the same colour as the rest of the leaf blade; trichomes on the abaxial surface of the leaves with 5–12(15) rays; widespread..... **38**

38a Leaf lobes apically obtuse to acute, sometimes rounded, sometimes with secondary lobes; lobes 1/4–2/3 of the distance to the midvein; leaves and young stems glabrescent to moderately pubescent **39**

38b Leaf lobes apically rounded, sometimes obtuse, never with secondary lobes; lobes up to 1/3(1/2) of the distance to the midvein; leaves and young stems usually densely pubescent **41**

39a Calyx lobes on long-styled flowers 7–10 mm long, ovate and foliaceous, apically obtuse; South Africa..... ***Solanum umtuma*** **Voronts. & S.Knapp**

39b Calyx lobes on long-styled flowers 4–7 mm long, deltate or long-triangular apically acuminate; northern Africa and Cape Verde Islands **40**

40a Calyx lobes on long-styled flowers 4–7 mm long, deltate, ca. 1/6 as long as the fruit at maturity; continental Africa north of the equator..... ***Solanum cerasiferum*** **Dunal**

40b Calyx lobes on long-styled flowers 6–7 mm long, long triangular, 1/2 to 1/3 as long as the fruit at maturity; Cape Verde Islands (Senegal?)..... ***Solanum rigidum*** **Lam.**

41a Prickles straight; corolla on long-styled flowers 1.8–2.5 cm in diameter; anthers ca. 4.5 mm long; Madagascar; Mauritius, Réunion ..... ***Solanum insanum*** **L.**

41b Prickles curved or straight; corolla on long-styled flowers 2.5–4.5 cm in diameter; anthers 5–9 mm long; widespread..... **42**

42a Leaves usually entire, sometimes lobed; trichomes on the abaxial leaf surface sessile or with stalks up to 0.1 mm long; fruits 1.5–3 cm diameter ..... ***Solanum campylacanthum*** **Hochst. ex A.Rich.**

42b Leaves lobed; trichomes on the abaxial leaf surface with stalks up to 0.5(1) mm long; fruits 2.5–4.5 cm diameter **43**

43a Leaves velvety red-brown adaxially; calyx lobes on long-styled flowers ovate to oblong, foliaceous, 7–10 mm long..... ***Solanum aureitomentosum*** **Bitter**

43b Leaves yellow-green to green-brown adaxially; calyx lobes on long-styled flowers deltate, usually not foliaceous, 2.5–6 mm long..... **44**

44a Leaves concolorous to weakly discolorous, indumentum yellowish; leaves ca. 1.5 times longer than wide; young stems terete to angular; north-eastern Africa ..... ***Solanum incanum*** **L.**

44b Leaves strongly discolorous, indumentum dirty greenish brown adaxially and whitish yellow abaxially; leaves 1.5–2.5 times longer than wide; young stems with somewhat raised longitudinal ridges; southern Africa..... ***Solanum lichtensteinii*** **Willd.**

45a Leaves on fertile branches with distinct lobes, at least some of the lobes longer than 1/4 of the distance from the midvein to the leaf edge.....**46**

45b Leaves on fertile branches entire or subentire or with some shallow lobes no longer than 1/4 of the distance from the midvein to the leaf edge.....**89**

46a Leaves more than 3 times longer than wide.....**47**

46b Leaves 1–3 times longer than wide.....**49**

47a Plant unarmed or prickles straight, orange to red; trichomes on the abaxial surfaces of the leaves with (9)12–14 rays..... ***Solanum elaeagnifolium*** **Cav.**

47b Plant densely armed with curved broad-based pale-yellow prickles; trichomes on the abaxial surfaces of the leaves, if present, with 0–8 rays **48**

48a Anthers 2.5–3.2 mm long; trichomes anywhere on the plant with 0–4 rays; South Africa..... ***Solanum sodomaeodes*** **Kuntze**

48b Anthers 5–6.5 mm long; trichomes anywhere on the plant with 5–8 rays; north-eastern Africa ..... ***Solanum glabratum*** **Dunal**

49a Leaves with at least some secondary lobing present **50**

49b Leaves lobed once only **51**

50a Flowers 3–7 per inflorescence, mauve to purple; anthers 5.5–7 mm long; South Africa..... ***Solanum rubetorum*** **Dunal**

50b Flowers 6–50 per inflorescence, white; anthers 9–10 mm long; invasive in South Africa and Kenya ..... ***Solanum sisymbriifolium*** **Lam.**

51a No prickles visible anywhere on the plant **52**

51b At least some prickles visible on the plant **57**

52a Plant scandent or scrambling, sometimes erect; anthers (4)5–6.5 mm long; inland eastern Africa ..... ***Solanum cyaneopurpureum*** **De Wild.**

52b Plant erect; anthers 2.3–5(8.5) mm long; widespread.....**53**

53a Corolla 1.5–3 cm in diameter; mauve or purple; southern Africa, Indian Ocean islands.....**54**

53b Corolla 0.9–1.5 cm in diameter; white (only occasionally pale violet); widespread on continent or cultivated.....**55**

54a Fruiting pedicels deflexed, curved; anthers 3.5–5.2 mm long; South Africa and Namibia..... ***Solanum burchellii*** **Dunal**

54b Fruiting pedicels straight and spreading; anthers 4.5–8.5 mm long; Mauritius and Réunion..... ***Solanum violaceum*** **Ortega**

55a Inflorescences 2.5–6 cm long, with 5–22 flowers ..... ***Solanum anguivi*** **Lam.**

55b Inflorescences 1–2.5 cm long, with 1–4(10) flowers.....**56**

56a Leaf blades 5–18 cm long, petioles 1–4 cm long; plant cultivated for leaves or fruits, widespread..... ***Solanum aethiopicum*** **L.**

56b Leaf blades 3–8 cm long, petioles 0.5–1.5 cm long; wild plant in southern Africa..... ***Solanum catombelense*** **Peyr.**

57a Prickles on young stems predominantly curved.....**58**

57b Prickles on young stems predominantly straight, sometimes straight and reflexed **70**

58a Young prickles and indumentum red; scandent shrubs; Madagascar **59**

58b Young prickles and indumentum yellowish, green or brown; erect or scandent shrubs; widespread (mainland Africa, rarely Madagascar, Indian Ocean Islands) **60**

59a Young stems with a dense covering of long-stalked trichomes and prickles of different lengths; 1000–3000 m elevation .... ***Solanum myoxotrichum*** **Baker**

59b Young stems with a sparse or dense covering of sessile or short-stalked trichomes of uniform lengths; 0–1000 m elevation ..... ***Solanum erythracanthum*** **Dunal**

60a Stem trichomes with stalks 0.1–0.4 mm long; anthers 6–10 mm long; coastal eastern Africa ..... ***Solanum usaramense*** **Dammer**

60b Stem trichomes sessile or the stalks to 0.1 mm long; anthers 3–8.5 mm long; widespread **61**

61a Plants of the Indian Ocean islands (Mauritius, Réunion, Aldabra) **62**

61b Plants of continental Africa **63**

62a Fruiting pedicels straight and spreading; corolla to 3 cm in diameter; petiole not winged from decurrent leaf base; Mauritius and Réunion ..... ***Solanum violaceum*** **Ortega**

62b Fruiting pedicels curved and deflexed; corolla to 2 cm in diameter; petiole slightly winged from decurrent leaf base; Aldabra (Seychelles) ..... ***Solanum aldabrense*** **C.H.Wright**

63a Calyx in flower 7–9 mm long, apically caudate; calyx in fruit 10–12 mm long; trichomes with midpoints much longer that the rays; Tanzanian highlands, rare ..... ***Solanum inaequiradians*** **Bitter**

63b Calyx in flower 2–6 mm long, apically acute to acuminate or rarely caudate; calyx in fruit less than 10 mm long; trichomes with the midpoints short than or equal to the rays; widespread **64**

64a Plant always erect; leaves discolorous; corolla 0.8–1.5 cm in diameter, lobed for 1/2–2/3(3/4) of the way to the base **65**

64b Plant often scandent or semi-scandent; leaves usually concolorous; corolla (1)1.5–2.5 cm in diameter, lobed for 2/3 of the way to the base or more .. **66**

65b Inflorescences 2.5–6 cm long, with 5–22 flowers; polymorphic weed across highland areas of Africa and Madagascar ..... ***Solanum anguivi*** **Lam.**

65a Inflorescences 1–2.5 cm long, with 1–4 flowers; southern Africa ..... ***Solanum catombelense*** **Peyr.**

66a Prickles 3–5 mm long; leaf blades 1.5–2.5(9) cm long, leaf base narrow-cuneate to attenuate; South Africa and Namibia ..... ***Solanum capense*** **L.**

66b Prickles 1–4(7) mm long. Leaf blades (1)2.5–14 cm long, leaf base cuneate to truncate; widespread **67**

67a Calyx 2–4 mm long in flower **68**

67b Calyx 4–6 mm long in flower **69**

68a Prickles on young stems 1.5–2(3) mm long; leaves 2.5–5.5 cm long; seeds 2.5–3.5 mm long; inland eastern Africa ..... ***Solanum cyaneopurpureum*** **De Wild.**

68b Prickles on young stems 2–4 mm long. Leaves 3–14 cm long; seeds 1.8–2.5 mm long; coastal eastern Africa..... ***Solanum zanzibarense*** **Vatke**

69a Leaves drying yellow-green; petiole 1/4–1/3 of the leaf length; eastern and north-eastern Africa ..... ***Solanum hastifolium*** **Hochst. ex Dunal**

69b Leaves drying dark red-brown; petiole 1/3–1/2 of the leaf length; southern Africa..... ***Solanum torreanum*** **A.E.Gonç.**

70a Inflorescence with more than 10 flowers **71**

70b Inflorescence with 10 or fewer flowers.....**74**

71a Leaves 1–4(6) cm long; corolla 1.3–2.4 cm in diameter; seeds almost black; north of the equator.....***Solanum forskalii*** **Dunal**

71b Leaves (5)7–25 cm long; corolla 0.7–1.5 cm in diameter; seeds yellow to orange-brown; widespread **72**

72a Inflorescences 1–2.5 cm long, peduncle 0–2 mm long; trichomes on the young stems with (5)8–20 rays; western Africa***Solanum anomalum*** **Thonn.**

72b Inflorescences 2.5–8 cm long, peduncle 2–30 mm long; trichomes on the young stems with 6–8 rays; widespread.....**73**

73a Inflorescences branched many times (more than once); Kenya and Tanzania ..... ***Solanum usambarense*** **Bitter**

73b Inflorescences unbranched or forked; widespread.....***Solanum anguivi*** **Lam.**

74a Young prickles almost filiform and easily bendable like bristles, with no firm prickles anywhere on the plant; eastern African savannah ..... ***Solanum setaceum*** **Dammer**

74b Young prickles sturdy when touched; widespread.....**75**

75a Calyx lobes oblong, foliaceous, apically obtuse; lowland eastern Africa, rare.. .....***Solanum lamprocarpum*** **Bitter**

75b Calyx lobes deltate, sometimes long-ovate or narrow-oblong, not clearly foliaceous, apically acute to acuminate; widespread.....**76**

76a Calyx 7–12 mm long in flower **77**

76b Calyx 2–7 mm long in flower **80**

77a Prickles on young branches 8–16 mm long; leaves elliptic; Ethiopian highlands.....***Solanum macracanthum*** **A.Rich.**

77b Prickles on young branches 2–7 mm long; leaves ovate; Tanzania, South Africa and Madagascar.....**78**

78a Corolla lobed for 3/4 of the way to the base or more; trichomes on the young stems with midpoints (0.5)1.5–2.5(3) mm long; Tanzanian highlands..... ..... ***Solanum inaequiradians*** **Bitter**

78b Corolla lobed for 1/2–2/3 of the way to the base; trichomes on the young stems with midpoints 0.15–5 mm long; South Africa and Madagascar **79**

79a Young stems with a dense covering of long-stalked trichomes and prickles of different lengths; Madagascar.....***Solanum myoxotrichum*** **Baker**

79b Young stems with no bristles, only prickles and trichomes of uniform length; South Africa..... ***Solanum tomentosum*** **L.**

80a Young prickles and indumentum red; pedicels (1)1.5–4 cm long; Madagascar **81**

80b Young prickles and indumentum pale yellow to brown or purple, never red; pedicels 0.2–1(1.4) cm long; mainland Africa, rarely in Madagascar **82**

81a Young stems with a dense covering of long-stalked trichomes and prickles of different lengths; 1000–3000 m elevation .... ***Solanum myoxotrichum*** **Baker**

81b Young stems with a sparse or dense covering of sessile or short-stalked trichomes of uniform lengths; 0–1000 m elevation ..... ***Solanum erythracanthum*** **Dunal**

82a Corolla lobed for 3/4 of the way to the base or deeper; plants scrambling or climbing, sometimes erect **83**

82a Corolla lobed for 1/2–2/3 of the way to the base; plants erect, sometimes scandent **86**

83a Prickles on young stems 2–4 mm long; eastern African coastal areas ..... ***Solanum zanzibarense*** **Vatke**

83b Prickles on young stems (3)4–13 mm long; arid environments across continental Africa **84**

84a Prickles reflexed; seeds nearly black ..... ***Solanum forskalii*** **Dunal**

84b Prickles perpendicular to the stem; seeds pale yellow to orange-brown **85**

85a Leaves 1–2 times longer than wide; leaf lobes to 2/3 of the distance to the midvein; leaves concolorous to strongly discolorous; north-eastern Africa ..... ***Solanum adoense*** **Hochst. ex A. Rich.**

85b Leaves 1.5–3 times longer than wide; leaf lobes to 1/2 of the distance to the midvein; leaves concolorous; South Africa ..... ***Solanum humile*** **Dunal**

86a Petiole 1/3–2/3 as long as the leaf blade; South Africa ..... ***Solanum tomentosum*** **L.**

86b Petiole 1/6–1/3 as long as the leaf blade; widespread **87**

87a Leaf blades (5)11–25 cm long; inflorescence with 5–22 flowers; common variable highland weed widespread across Africa ..... ***Solanum anguivi*** **Lam.**

87b Leaf blades 1.7–9 cm long; inflorescence with 1–6 flowers; southern Africa .. **88**

88a Leaves elliptic; corolla 1.5–2.2 cm in diameter, mauve to purple ..... ***Solanum burchellii*** **Dunal**

88b Leaves ovate, sometimes oblong; corolla 0.9–1.3 cm in diameter, usually white ..... ***Solanum catombelense*** **Peyr.**

89a At least some inflorescences branched several to many times; inflorescence with (10)20–150 flowers; erect shrubs to small trees **90**

89b Inflorescences unbranched or forked; inflorescence with 1–10(20) flowers; scrambling, scandent or erect shrubs **98**

90a Plants with at least some visible prickles or bristles **91**

90b Plants with no prickles or bristles visible **95**

91a Young stems with soft or thin bristles **92**

91b Young stems with firm deltate prickles **93**

92a Stem bristles soft and white, 0.4–0.7 mm wide at base; leaves ca. 2 times longer than wide; 1500 -1800 m elevation; Tanzania ..... ***Solanum schliebenii*** **Werderm.**

92b Stem bristles erect purple-black or brown, 0.2–0.4 mm wide at base; leaves 2.5–3.5 times longer than wide; 1800–2600 m elevation; eastern Africa..... ***Solanum schumannianum*** **Dammer**

93a Leaf blades 12–40 cm long, whitish grey underneath with trichomes, falling as white powder when touched; inflorescences with 30–150 flowers; anthers 2.5–3 mm long..... ***Solanum giganteum*** **Jacq.**

93b Leaf blades 4–10(16) cm long, yellow-green, brown or rarely whitish grey underneath, trichomes not falling when touched; inflorescences with 10–30 flowers; anthers 3.5–6 mm long..... **94**

94a Leaf base cuneate to acuminate; anthers 3.5–4 mm long; stem trichomes with midpoints 0.4–1(2) mm long; Democratic Republic of the Congo, Rwanda, Uganda, Tanzania; rare..... ***Solanum wittei*** **Robyns**

94b Leaf base rounded, rarely cuneate; anthers 4–6 mm long; stem trichomes with midpoints 0.05–0.2 mm long; widespread. ***Solanum tettense*** **Klotzsch**

95a Leaves elliptic, with 8–12 pairs of primary veins, 2.5–3.5 times longer than wide..... ***Solanum schumannianum*** **Dammer**

95b Leaves ovate, sometimes elliptic, with 4–8 pairs of primary veins, 1.5–2.5(3) times longer than wide..... **96**

96a Leaves concolorous; calyx lobes 2–4(5) mm long, long-acuminate; Sudan, Eritrea, Ethiopia, Somalia, 1500–2800 m elevation ..... ***Solanum schimperianum*** **Hochst. ex A.Rich.**

96b Leaves discolorous; calyx lobes 1–2 mm long, obtuse to acute, sometimes acuminate; southern Ethiopia, Somalia and further south, 650–1900 m elevation..... **97**

97a Leaf base cuneate to acuminate; anthers 3.5–4 mm long; stem trichomes with midpoints 0.4–1(2) mm long; Democratic Republic of the Congo, Rwanda, Uganda, Tanzania; rare..... ***Solanum wittei*** **Robyns**

97b Leaf base rounded, rarely cuneate; anthers 4–6 mm long; stem trichomes with midpoints 0.05–0.2 mm long; widespread, common ..... ***Solanum tettense*** **Klotzsch**

98a Plants with no prickles visible **99**

98b Plants with at least some visible prickles. **109**

99a Leaves 3–8 times longer than wide, narrow-elliptic or lanceolate, rarely narrow-ovate..... **100**

99b Leaves 1–3 times longer than wide, orbicular, ovate, obovate, elliptic or oblong **101**

100a Corolla 0.9–1.5 cm in diameter; trichomes on young stems with ca. 8 rays; native plant in eastern and north-eastern Africa, black cotton soils ..... ***Solanum lanzae*** **J.-P.LeBrun & Stork**

100b Corolla 2.5–3(5) cm in diameter; trichomes on young stems with 10–14(16) rays; weed in southern Africa and Mediterranean..... ***Solanum elaeagnifolium*** **Cav.**

101a Leaves less than 1.5 times longer than wide, orbicular, ovate or obovate; arid north-eastern Africa **102**

101b Leaves more than 1.5 times longer than wide, ovate, elliptic or oblong; widespread **103**

102a Erect shrub to small tree 1.5–4 m tall; leaves and flowers readily deciduous, so stems often bare; seeds orange-brown ..... ***Solanum jubae*** **Bitter**

102a Scandent to erect shrub up to 1 m tall; leaves and flowers not readily deciduous, stems not bare; seeds dark brown to almost black ..... ***Solanum cordatum*** **Forssk.**

103a Leaf base attenuate; corolla lobed for ca. 3/4 of the way to the base; trichomes on the young stems with 10–20 rays **104**

103a Leaf base cuneate, rounded or truncate, rarely attenuate; corolla lobed for 1/2–2/3 of the way to the base; trichomes on the young stems with 6–9(12) rays **105**

104a Petioles 1/3–2/3 as long as the adult leaves; flowers 4–8 per inflorescence; seeds 2.8–3.5 mm long; Angola ..... ***Solanum pauperum*** **C.H.Wright**

104b Petioles 1/6–1/4 as long as the adult leaves; flowers 8–15 per inflorescence; seeds 3.6–4.8 mm long; eastern and south-eastern Africa..... ***Solanum goetzei*** **Dammer**

105a Calyx lobes 5–10 mm long in flower, foliaceous, ovate to elliptic; leaf apex rounded, sometimes obtuse; arid north-eastern Africa..... ***Solanum pampaninii*** **Chiov.**

105b Calyx lobes 1–4.5 mm long in flower, not clearly foliaceous, deltate; leaf apex acute or obtuse, sometimes rounded; widespread **106**

106a Scandent shrub; inflorescences 3.5–7 cm long; young stems with stalked trichomes, the stalks 0.1–0.4 mm long; eastern African highlands ..... ***Solanum stipitatostellatum*** **Dammer**

106b Erect herb or shrub; inflorescences 1–3.5 cm long; young stems with sessile or stalked trichomes, the stalks up to 0.15 mm long; widespread **107**

107a Fruit (1)1.5–2.5(5) cm in diameter; plant cultivated for leaves or fruits; widespread and common in western and eastern Africa..... ***Solanum aethiopicum*** **L.**

107b Fruit (0.7)0.75–1.1 cm in diameter; wild plant in southern Africa **108**

108a Leaves elliptic; corolla 1.5–2.2 cm in diameter, mauve to purple..... ***Solanum burchellii*** **Dunal**

108b Leaves ovate, sometimes oblong; corolla 0.9–1.3 cm in diameter, usually white ..... ***Solanum catombelense*** **Peyr.**

109a Prickles on young stems predominantly curved.....**110**
109b Prickles on young stems predominantly straight, sometimes straight and reflexed.....**125**
110a Most leaves on reproductive branches less than two times longer than wide.. .....**111**
110b Most leaves on reproductive branches two times longer than wide or longer. **115**
111a Corolla lobed for ca. 3/4 of the way to the base or deeper; seeds dark brown to almost black; continental Africa north of the equator **112**
111b Corolla lobed for ca. 2/3 of the way to the base; seeds yellow to orange-brown; continental Africa south of the equator.....**113**
112a Inflorescences with 1(2) flowers; trichomes on young stem with 12–18 rays. ..... ***Solanum cordatum*** **Forssk.**
112b Inflorescences with (1)2–20 flowers; trichomes on young stem with 6–10 rays.....***Solanum forskalii*** **Dunal**
113a Leaves drying yellowish green; anthers 3–4 mm long; southern Africa..... .....***Solanum litoraneum*** **A.E.Gonç.**
113b Leaves drying reddish brown; anthers (4.5)5.5–8 mm long; Madagascar **114**
114a Young stems with a dense covering of long-stalked trichomes and prickles of different lengths; 1000–3000 m elevation..... ..... ***Solanum myoxotrichum*** **Baker**
114b Young stems with a sparse or dense covering of sessile or short-stalked trichomes of uniform lengths; 0–1000 m elevation ....***Solanum erythracanthum*** **Dunal**
115a Plant erect, 0.4–1.5 m tall; corolla 0.9–1.4 cm in diameter; anthers 2.5–3.5 mm long.....**116**
115b Plant scandent, sometimes erect; corolla (1.2)1.5–3 cm in diameter; anthers 4–8 mm long.....**117**
116a Inflorescence 3–4(6) cm long; trichomes on abaxial surfaces of the leaves with stalks 0.15–0.4 mm long; eastern Africa..... ***Solanum mauense*** **Bitter**
116b Inflorescence 1–2.5 cm long; trichomes on abaxial surfaces of the leaves with stalks 0–0.15 mm long; southern Africa..... ***Solanum catombelense*** **Peyr.**
117a Calyx 7–9 mm long at anthesis, the lobes caudate; trichomes on young stems with midpoints (0.5)1.5–2.5(3) mm long; Tanzanian highlands .... ***Solanum inaequiradians*** **Bitter**
117b Calyx 2–6 mm long at anthesis, the lobes acute to acuminate; trichomes on young stems with midpoints 0–1.5 mm long; widespread.....**118**
118a Leaves 3–6 times longer than wide, the bases attenuate; arid eastern and north-eastern Africa ..... ***Solanum glabratum*** **Dunal**
118b Leaves 2–3 times longer than wide, the bases cuneate to cordate; eastern Africa and Madagascar.....**119**
119a Corolla (1.8)2–3 cm in diameter; anthers (5.5)6–10 mm long **120**
119b Corolla 1–2(2.4) cm in diameter; anthers 4–6(7) mm long **122**

120a Inflorescences with 1–2(5) flowers; young stems with trichomes sessile or stalked, the stalks up to 0.2 mm long; Madagascar..... ***Solanum erythracanthum*** **Dunal**

120b Inflorescences with 3–10 flowers; young stems with trichomes always stalked, the stalks 0.1–0.4 mm long; eastern Africa..... **121**

121a Leaves 3–8 cm long, densely stellate-pubescent on both sides; eastern African coasts ..... ***Solanum usaramense*** **Dammer**

121b Leaves 6–13 cm long, adaxially glabrescent; eastern African mountains ..... ***Solanum stipitatostellatum*** **Dammer**

122a Leaves apically rounded, with thick-stalked trichomes on the adaxial surface; inflorescence with 1–2(3) flowers; eastern Africa..... ***Solanum taitense*** **Vatke**

122a Leaves apically acute to obtuse, sometimes rounded, without thick-stalked trichomes on the adaxial surface; inflorescence with (1)2–20 flowers **123**

123a Leaves with 2–3 pairs of primary veins; seeds dark brown to almost black; continental Africa north of the equator..... ***Solanum forskalii*** **Dunal**

123b Leaves with 4–6 pairs of primary veins; seeds yellow to orange-brown; continental Africa south of the equator or near the equator **124**

124a Prickles usually under 2 mm long; leaves 2.5–5.5 cm long; trichomes on the leaves and stems with stalks ca. 0.1 mm long; inland eastern Africa ..... ***Solanum cyaneopurpureum*** **De Wild.**

124b Prickles over 2 mm long; leaves 3–14 cm long; trichomes on the leaves and stems sessile or with stalks under 0.1 mm long; coastal eastern Africa ..... ***Solanum zanzibarense*** **Vatke**

125a Leaves more than two times longer than wide..... **126**

125b Leaves less than two times longer than wide..... **130**

126a Corolla 2.5–3(5) cm in diameter; anthers 6–10 mm long; invasive in southern Africa and around the Mediterranean ..... ***Solanum elaeagnifolium*** **Cav.**

126b Corolla 0.9–2.3 cm in diameter; anthers 2.5–6 mm long; Ethiopia, Tanzania or further south **127**

127a Prickles on young stems 8–16 mm long; calyx 7–12 mm long at anthesis; Ethiopia..... ***Solanum macracanthum*** **A.Rich.**

127b Prickles on young stems 1–6 mm long; calyx 2.5–7 mm long at anthesis; Tanzania or further south..... **128**

128a Plant scrambling shrub; leaves almost glabrous, trichomes on the leaves with up to 4 rays; Tanzanian coastal forest, rare (possibly extinct) ..... ***Solanum ruvu*** **Voronts.**

128b Plant erect; leaves stellate-pubescent, trichomes on the abaxial sides of the leaves with 17–15 rays; southern Africa **129**

129a Leaves elliptic; corolla 1.5–2.2 cm in diameter, mauve to purple..... ***Solanum burchellii*** **Dunal**

129b Leaves ovate, sometimes oblong; corolla 0.9–1.3 cm in diameter, usually white ..... ***Solanum catombelense*** **Peyr.**

130a Leaves on reproductive branches less than 2 cm long **131**
130b Leaves on reproductive branches more than 2 cm long **134**
131a Leaves and flowers predominantly on short shoots, few on main stems; corolla lobed for 1/2–2/3 of the way to the base; seeds yellow to orange-brown; southern Madagascar **132**
131b Leaves and flowers predominantly on main stems, few on short shoots; corolla lobed for ca. 3/4 of the way to the base; seeds dark brown to almost black; continental Africa north of the equator..... **133**
132a Calyx lobes fused in fruit, ca. 10 mm long, fully covering the mature fruit; leaves ovate ..... ***Solanum toliaraea*** **D'Arcy & Rakot.**
132b Calyx lobes free in fruit, 4–5 mm long, the mature fruit at least partly exposed; leaves orbicular, elliptic or ovate ..... ***Solanum batoides*** **D'Arcy & Rakot.**
133a Inflorescences with 1(2) flowers; trichomes on young stem with 12–18 rays. ..... ***Solanum cordatum*** **Forssk.**
133b Inflorescences with (1)2–20 flowers; trichomes on young stem with 6–10 rays ..... ***Solanum forskalii*** **Dunal**
134a Leaves elliptic..... **135**
134a Leaves ovate **136**
135a Leaves drying yellow-green; anthers 3.5–5.2 mm long; southern Africa .... ***Solanum burchellii*** **Dunal**
135b Leaves drying reddish brown; anthers 5.5–8 mm long; Madagascar .... ***Solanum erythracanthum*** **Dunal**
136a Anthers 3.2–3.5 mm long; southern Africa..... ***Solanum tomentosum*** **L.**
136b Anthers 4.5–8 mm long; widespread..... **137**
137a Calyx lobes 3–7 mm long at anthesis **138**
137b Calyx lobes 0.5–3 mm long at anthesis **139**
138a Leaves yellow-green; trichomes on the abaxial sides of the leaves with midpoints 1–2 mm long; Tanzania..... ***Solanum inaequiradians*** **Bitter**
138b Leaves reddish; trichomes on the abaxial sides of the leaves with midpoints to 0.5 mm long; Madagascar..... ***Solanum myoxotrichum*** **Baker**
139a Leaves 6–13 cm long; prickles on young stems 1–2 mm long; highland eastern Africa..... ***Solanum stipitatostellatum*** **Dammer**
139b Leaves 1–5(6) cm long; prickles on young stems 2–10 mm long; continental Africa, north of the equator or Madagascar **140**
140a Pedicels 0.2–1 mm long; seeds almost black; continental Africa, north of the equator ..... ***Solanum forskalii*** **Dunal**
140b Pedicels 1.5–2(2.5) cm long; seeds dull yellow to orange-brown; Madagascar ..... ***Solanum erythracanthum*** **Dunal**

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Supplementary material 1

List of *Solanum* species occurring in Africa as defined in this paper
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Data type: species data
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Supplementary material 2

Specimens examined by the authors for the preparation of these keys
Authors: Sandra Knapp, Maria S. Vorontsova, Tiina Särkinen
Data type: species data
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